INTERNATIONAL
MEDICAL MAGAZINE.

VOL. VIII.] JUNE, 1899. [NO. 6.

LECTURE.

A CASE OF TRAUMATIC EFFUSION OF THE HIP JOINT.[1]

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THE case that I wish to present to you to-day, and discuss the differential diagnosis and treatment, is a rather obscure one, and may be mistaken for a number of acute affections of the hip joint, and it is worth our while to enter into the subject quite fully.

The patient is a young man of twenty-one years. His parents are both living and in apparently good health. The patient tells us that he has never had any serious illness other than scarlet fever when a small boy. Four weeks ago, while driving an express cart, he was thrown out, hitting on the side of the curbstone, but he does not remember upon which side he fell; after the accident he was able to get up at once, and was only troubled by a little pain in the left hip joint; but on the following days the pain increased considerably, so much so that the patient was obliged to limp.

I saw the man five days after the accident, and made the following notes: The lungs and the heart revealed no sign of any lesion by auscultation and the result of the examination of the urine was negative. When the patient was placed in a horizontal position, the pelvis did not lie horizontally, and it was found that the left half was about three centimeters lower than the right. When we examined the upper and external aspect of the femur, the first thing that we noticed was that the large trochanter on the left side was not so prominent as on the right. The left leg appeared to be somewhat lengthened as compared with the right, and still this lengthening was only apparent, because it was due to the oblique position of the pelvis, and this was demonstrated by a careful measurement taken from the anterior superior spine of the pelvis to the

[1] A clinical lecture delivered at the Tremont Dispensary.

internal malleolus, and instead of a lengthening we found a shortening of about one centimeter and a half on the left side.

As to the movements that can be made with the hip joint, we found that flexion was restricted, abduction was almost entirely lost, as was also inward rotation, but outward rotation was perfectly free; the greater trochanter was found to lie in the Roser-Nelaton line. Over the entire aspect of the joint a slight tumefaction was noticed, and by palpation a distinct fluctuation could be elicited.

An examination made four days after this showed that the pelvis was still in an oblique position, so that the left half was fully two centimeters lower than the right. Measurement showed that the left leg was still about a centimeter and a half shorter than the right. As to the movements obtained by the hip joint, it was found that abduction was almost completely lost, inward rotation was rather limited, while outward rotation was quite free; flexion could be executed almost completely. We ascertained for a certainty that the femur was in forced abduction, because every attempt to abduct the leg while it was kept in a parallel position with the right limb, produced a simultaneous movement of the pelvis, but there was no abduction in the hip joint. This position in abduction of the femur in the femoral joint also explained the low position of the left half of the pelvis, because, on account of the abduction of the limb, a shortening of the left leg was naturally produced, and to counteract this shortening of the left leg the patient would lower the pelvis of the corresponding side. The shortening of the leg was only an apparent one, and this was due to the abduction of the limb, because on the normal side a shortening of one centimeter could be produced by abduction of the leg; and, what is more, abduction of the left leg in the femoral joint is absolutely an impossibility, because such movements of the leg will only produce a displacement of the pelvis. The absence of any projection of the trochanter outwardly can be explained by the abduction, because abduction of the sound leg also diminished the projection of the trochanter. The tumefaction which I mentioned as being present over the anterior aspect of the hip joint and fluctuation could be still made out.

Now in the treatment of this case the limb was put on a posterior splint and a moderate amount of extension was applied. This bandage was allowed to remain on four weeks, during which time the posterior dressings were once changed and re-applied, and during the time that the patient was in bed wearing the splint the health was in every way excellent, and at no time was there any rise in temperature. At the end of four weeks the bandage was removed, passive motion was begun and the patient was told to make a few active movements of the limb as well, and in eight days he was allowed to leave his bed. Other than the stiffness due to the immobilization of the joint, walking was very satisfactory, and of the restricted movements which we found when we first saw the patient, none

now remain. Abduction is nearly complete, and the pelvis was normal in position, while inward rotation was nearly normal.

This case requires that we should make a good differential diagnosis, as the hip joint is, as you know, a favorite site for a number of acute affections. As to the history of the case, little can be obtained. The patient says that he fell, and, as may be seen from what he told us at the time, he probably fell on the left side, striking somewhere near the hip joint, perhaps on the greater trochanter. Now, basing the symptoms on the changes in motion, it would appear that the patient was suffering from a contusion of the hip joint, and when seen, six days after the accident, the only diagnosis that I could make was a traumatic effusion in the femoral joint, but I shall reach the diagnosis by exclusion and argue it before you.

When discussing the subject from a differential point of view, fracture of the neck of the femur certainly should be considered in the first place, but we should discriminate between an ordinary transverse fracture and an impacted fracture of the neck of the femur. The most important symptoms of transverse fracture of the neck of the femur are outward rotation in its fullest extent and the shortening of the limb. In some rare cases the leg has been found in inward rotation, especially when, removing the patient to his home or the hospital, the friends in so doing have rotated the leg inwardly, or the patient may perhaps himself have done it. The position of the trochanter is also changed, and will be either dislocated upward and backward, the degree of dislocation being in direct relation to the amount of shortening and outward rotation of the leg, and it will also be found several centimeters above the Roser-Nelaton line.

Pain is very acute in fracture of the neck of the femur and the functional disturbances are always marked, active movements of the limb being impossible. A transverse fracture of the neck of the femur can therefore be immediately excluded in the present case, as the patient was able to get up immediately after the operation, and walked about, a thing that he would never have been able to do had he sustained a fracture; and, what is more, in his case no evidence of crepitation could be elicited, and outward rotation was absent. Of the symptoms, however, which characterized the case, there were many which were so much like those produced by impacted fracture of the femoral neck, that I was only able to exclude this traumatism after a repeated and very careful examination.

The essential symptoms of impacted fracture of the neck of the femur are the same as those met with in transverse fracture; viz., a shortening of the leg, with outward rotation. The outward rotation of the limb is a necessary consequence of fracture, because, as soon as the femur ceases to be fixed in the acetabulum by the condyle which is connected with the large mass of tissues that are united to its external surface along its longitudinal axis, the limb is naturally made to rotate outwardly from the simple effect of gravity.

Outward rotation may in some cases be entirely lacking, and in general its degree will depend upon a larger or smaller amount of wedging in of the posterior surfaces of the fracture. The trochanter will be found to move if we attempt to produce movements of rotation, using the neck of the femur in the acetabulum as a center, while if the fracture is a complete transverse one, the trochanter will be found to turn on its proper longitudinal axis, and the patient himself will endeavor to keep the foot in a rotated position.

In infrequent cases the limb may be straight, or even an inward rotation may occur when an impacted fracture of the neck of the femur has taken place.

We will now consider the diagnostic features presented by our patient. There was a shortening of the left leg, abduction was considerable, inward rotation was somewhat restricted, while outward rotation was perfectly free. Shortening would speak in favor of impacted fracture of the neck of the femur, but the limited amount of restriction of inward rotation, which almost without exception may be said never to be present in a case of fracture, and still more from the fact that the patient, after having sustained a fracture, has walked about, decidedly go to prove that no fracture was present in our patient.

Although, as I have already said, there have been cases recorded where patients have been able to get up and walk after fracture of the femur has taken place, the projection of the trochanter which, in the case of fracture is explained by the fact that there is an inward dislocation of the trochanter, was due in the case before us to the abduction which was present. Now a traumatism that would have been able to produce a fracture certainly is to be found in the history of our patient; but, taking everything into consideration, and especially the youth of our patient, the facts speak against fracture, because this lesion, when occurring in the neck of the femur, is more usually met with in old people. In them the bone has undergone a certain amount of senile change and has become porous, and consequently its power of resistance is very greatly diminished. As to the tumefaction which we found in the region of the hip joint, it neither speaks in favor of nor against the presence of a fracture, and Lossen has said that if fracture is not produced by a fall, a tumefaction of the hip will be looked for in vain, because the effusion of blood is generally very slight and is enclosed in the capsule. Now if we sum up the result of the differential diagnosis, we can surely exclude an impacted fracture of the neck of the femur as being the cause of the shortening of the limb in our patient, and as being a hindrance to some of the movements of rotation of the limb.

We should also take into consideration the question of a traumatic dislocation of the articulation of the femur, and this would be a forward dislocation, and in infrequent cases we would get an outward rotation

when there is an iliac dislocation. But, in point of fact, traumatic dislocations are extremely infrequent; and, as you can readily understand, quite an amount of force will be necessary to roll the condyle out of the deep cavity of the acetabulum and to lacerate and tear the strong fibrous capsule along with the other ligaments present around the joint; and we must assume that a dislocation can only take place if the movements of flexion, abduction and adduction, which are physiologically possible, have been greatly exaggerated.

When the ligamentum teres has been rent, the condyle is lifted out of the acetabulum, and then usually finds a resting place in the neighborhood of this cavity, due to some secondary movement of the limb. The forces which will produce dislocation are always indirect, such as a fall on the heel, or a blow on the trochanter; or the bent knee may, in certain cases, drive the head of the bone out of the acetabulum; but in by far the larger number of instances it is a violent and sudden exaggeration of an otherwise physiologic movement of the limb that produces this accident. Now, against the possibility of a traumatic dislocation being present in our patient, we can say that the direct force which acted on the femoral joint would not produce this. The force had a direct effect on the trochanter, a lever effect on the condyle did not take place; and, what is still more, all anomalies in the position of the limb which are characteristic of anterior or posterior dislocation of the femur are wanting. The best evidence that an affection other than a traumatic dislocation at the hip joint is present in our case, will be found in the fact that there is such a considerable degree of mobility in the hip joint, a thing which would never be found if there were a fresh traumatic dislocation.

Considering the differential diagnosis, we should next take up the question of tuberculous coxitis. Tuberculosis of the joints very frequently develops after a traumatism, but the clinical course of tubercular coxitis is so characteristic that it is very difficult to make a mistake when this affection is present. Its course is usually exceedingly chronic, and we may divide it into the four following stages: First, we have the initial stage; second, the first part of the stage of efflorescence, with some change in the position of the limb, such as flexion, abduction and outward rotation, with an increased inclination of the pelvis, along with an apparent or true lengthening of the limb; third, we have the second stage of florescence, with adduction, inward rotation and flexion of the femoral joint, with apparent or true shortening of the leg; and, fourth, we have the ultimate stage of coxitis, which will end either in a spontaneous recovery, ankylosis, cure by surgical operation, or death due to a generalization of the tuberculosis.

The only stages of tubercular coxitis which we must consider in regard to our case are the first and second; and, while discussing these, I will at once mention the points that speak against tubercular coxitis. Our

patient was perfectly well and entirely free from any joint trouble up to the time of the accident, and there is no history of tuberculosis in his family. The boy met with an injury of the hip joint, and right afterwards the functional disturbances already related made their appearance. Before the accident occurred the patient had no pain, nor did he give any history of becoming easily tired when walking. Up to the time of the accident the gait was perfectly normal. He had never limped. One or both of these conditions would have certainly soon appeared if tubercular coxitis were present. We consequently have not a symptom that would indicate that the patient had had any sign of a commencing coxitis in the hip joint before the accident. The symptoms of the two stages of florescence of tubercular coxitis resemble in a general way those presented by our patient, viz., abduction, flexion, and outward rotation of the limb, along with a shortening of the left leg and an inclination of the pelvis on the same side; nevertheless, it is most evident that in the short time of a week, which elapsed between the time of the accident and the time he came under my care, a tubercular coxitis with all these functional disturbances could not have developed, even if there was a primary focus of the disease in the neck or in the head of the femur previously to the time of the injury. It would appear to me that, on the contrary, the chronic course of a tubercular coxitis, with all its characteristic symptoms, would be decidedly against the possibility of this disease being present in our patient.

I would briefly mention the fact that we may have an abscess by congestion following the ilio-psoas muscle after a tuberculous spondylitis; but in this affection we would have a flexion of the limb on account of the contract of the ilio-psoas muscle due to the inflammation present, but the hip joint would be free from pain, and if the patient were etherized it would be found that the seat of the disturbances in the mobility as well as the flexion of the femur is not situated in the hip joint. Now from the history of the patient nothing would justify us in assuming that there is any tubercular trouble in the joint, and we can consequently safely exclude this disease.

As to hysteric coxitis, or, in other words, the neuralgia of the hip joint, I may say that nervous affections of the joint are more particularly met with in females, and we sometimes get them in perfectly healthy subjects. The most frequent seat of the affection is the hip. The commencement is an acute one; traumatism, colds or emotions of any description are more often the occasional causes. The femur is slightly flexed, and is rotated slightly inwardly, so that the pelvis is a little raised up on the diseased side, and consequently the foot appears to be somewhat shortened. A characteristic symptom is the evident one of pain in this disease, such as increased sensibility on pressure, as well as an intense hyperalgesia of the skin covering the joint. If you give ether to these patients, the functional disturbances and the contraction will usually immediately disappear.

In the patient of to-day's clinic there is no pain when we press upon the joint, and all doubts as to the probability of hysteria in this case are removed if we can prove, as we have, that the objective changes, viz., shortening of the limb, the rotated position and the fluctuating tumor, are present. Consequently hysteric coxitis can be excluded, because we have not a single characteristic symptom of it in the present case.

Now there is another disease of the hip joint which we must consider, because it has many symptoms in common with the case before us—I refer to coxa vara. A typical coxa vara has a chronic course and is never an acute pathologic process, and the majority of cases will be found in young adults varying in age between twelve and twenty years, which develop without any definite cause, or occasionally after traumatism and pain in the region of the hip. Now if these patients are subjected to any effort the pain will usually become more pronounced, and it has also been noted that during cloudy or rainy weather the pain is increased. Occasionally pain will be wanting, and the only thing that the patients will remark is that they get tired more easily, and cannot do any amount of work. On the other hand, we will meet with cases where there is an exceptional amount of pain. Whether pain is present or not, a gradually increasing limping gait will indicate that the disease is present. The pain only lasts as long as the bone is subject to changes in its shape. The most important symptoms of coxa vara are adduction and outward rotation, with a high position of the trochanter. Now in the present case the acute development of the affection, absence of adduction of the leg and the entirely free outward rotation speak against the possibility of a coxa vara.

Arthritis deformans begins very gradually, and produces pain in the hip when the patient walks, and there is always a certain amount of stiffness in the joint. As its name indicates, this disease is due to a deformity of the bone and the cartilage, more especially of the neck and head of the femur, due partly to a hyperplastic and partly to a degenerative process in the bone. If the latter predominates, a very considerable atrophy of the bone will result. The immobility of the hip joint will decrease more and more in consequence of the atrophy, and very often destructive dislocations and sub-dislocations are produced, which cause a shortening of the leg and a high position of the trochanter. If, on the other hand, hyperplastic processes are predominating, functional disturbances of the femoral joint will result. Arthritis deformans is a disease of middle life and old age, and in the present case we are dealing with a young subject; and, what is more, the sudden appearance of the functional disturbances in connection with the traumatism speak decidedly against the possibility of this disease in the present case. We can also immediately exclude synovitis serosa, which occurs during the course of acute infectious diseases, such as the exanthemata and gonorrheal inflammations of the joints. The latter inflammatory process usually goes on to suppuration and usually results from

an infection by the organisms that are circulating in the blood. I only mention this latter point in order to complete the question of differential diagnosis, for in the patient of this morning the history does not present any reason why any one of the diseases mentioned should be considered as the probable factor for the effusion occurring in the hip joint. Now, having discussed the affections which may occur in the hip joint, I will consider more clearly the diagnosis of traumatic effusion of the hip joint; and, first of all, let us once more go over the history of our patient. He fell while getting on to his cart, most likely hitting on the trochanter, and he then sustained a contusion of the left femoral joint, and thereupon an effusion took place.

By contusion we mean an injury sustained by the tissues if they are subjected to a direct force. In by far the greater number of cases contusions are produced by a direct blow with the most varying forms of solid bodies, by the falling of a heavy weight against some part of the body simply, or by the falling of the body against a resisting surface. We must also consider the extent and the depth of the injury produced by the contusion, and here the shape and the size of the acting force, as well as the direction of its movement in relation to the axis of the body or the part on which the force acts, must be looked into. The larger the force of the bodies causing the contusion, the larger naturally will be the contusion. The form of the body causing the injury has also an influence on the extent of the contusion, and you will naturally see that a rough surface will be more destructive than a smooth one. The intensity of the effect of the power being the same, the extent of the contusion as regards its depth will depend upon the direction of the movement of the contending bodies in relation to the axis of the part of the body struck. It may be said that in general the force will be transmitted all the more deeply the more vertical the direction of it in relation to the axis of the part struck. The symptoms of a contusion will vary greatly. They differ as regards their intensity and extent with the degree of contusion, and depend as to the functional disturbances produced upon the structure of the organs and the tissues that are injured.

The primary symptoms of a contusion are pain, a solution of continuity of the tissues, effusion of blood and lymph, and, lastly, disturbances in the functions of the parts. The symptom which is the most important, and which is the most characteristic of contusion of the joint, is the effusion of blood and lymph which takes place in consequence of the large amount of injury done to the blood vessels and lymphatics. The extravasations which are present in contusions of the tissues are of two kinds; in by far the larger proportion of all cases of contusion there is a simultaneous injury of the blood vessels and lymphatics which permit of the immediate outpour of blood and lymph.

In the case of our boy, we have a contusion of the hip joint, where

a perceptible injury of the soft parts covering it was absent. The force which in this case was the cause of the contusion appears to have had its axis in the neck of the femur. It is probable that the patient fell on the greater trochanter, and the transmission of the effect of the force appears to have acted by way of the neck of the femur on the acetabulum, and consequently an injury of the synovial membrane lining the capsule of the joint was produced, which caused a considerable effusion, and in consequence of this effusion the functional disturbances resulted.

Forces which act bluntly and of moderate intensity may produce injuries of the synovial membrane without producing any perceptible lesion in the skin covering the joint involved. The natural consequence of the contusion of the synovial membrane is an effusion of blood, which may reach quite a surprising size if the capsule of the joint is a large one. To the effusion of blood an effusion of the synovial fluid will soon be added, due to a serous synovitis.

Serous synovitis is more frequently produced by a contusion of a joint as well as by the effusion of blood into the synovial membrane. These intra-articular effusions may attain a very large size, so much so that in a large and deep-seated joint a swelling may be immediately detected by the sight, or by examination of the parts fluctuation may be elicited. When the joint has been filled to its utmost limit, it will, as a rule, be somewhat flexed, because in this position it is more relaxed, and its capacity is somewhat increased. A joint that has sustained a contusion with a large intra-articular effusion of blood will naturally be impaired in its mobility and will present a certain number of functional disturbances. The course of a contusion of a joint that is not complicated by a fracture is in most cases very favorable, and in a short time a complete recovery will take place. Occasionally slight inflammatory symptoms or a hydrarthrosis may be present for some little time, and in only a very few cases will a suppurating arthritis result.

In our patient, as we have seen, the functional disturbances produced by a simple contusion may be so considerable that the diagnosis may be hesitating between a traumatic effusion and fracture, because the symptoms of each are very similar. A careful examination of the parts will, however, prevent any mistake.

The treatment of traumatic effusions which have produced considerable functional disturbance in the joints, consists chiefly in immobilization, and, after the effusion of blood has become absorbed, passive movements and massage may be commenced. The limbs should be put at rest on a splint for a few weeks, and recovery will be most likely rapidly obtained, as in the patient we have just seen.

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ORIGINAL PAPERS.

THE PATHOLOGY OF GALL-STONES.

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The Pathology of Gall-Stones.—Excepting the pain, occasional fever and the exhaustion which follows them, the pressure of gall-stones occasions local disturbances only.

1. *Local Irritation.*—Gall-stones may remain in the gall-bladder long enough to attain to a considerable size without causing any change in the tissues with which they come in contact. Usually, however, distinct signs of inflammation are observed. The inflammation is catarrhal in type, with a muco-purulent exudation which sometimes undergoes calcification and lines or fills the gall-bladder with a mortar-like mushy mass in which cholesterin crystals and precipitated bile pigment may occur. Being of different composition from the gall-stones, this mass forms about them, but does not enter into their structure.

The mucous membrane shows a variety of changes, sometimes being smooth and atrophic with a shining moist surface, at others roughened, ulcerated and eroded and full of more or less marked irregular pouches or diverticula which may contain muco-pus, or, sometimes, gall-stones, which may actually be encapsulated in the diverticula.

The muscular coat of the bladder walls is very frequently found to be in a condition of fatty degeneration which makes it unusually distensible. Sometimes the tissues show calcification. Atrophy of the gall-bladder is rarely seen to follow gall-stone, but in some cases, with stones of moderate size, one finds the organ very much shrunken and highly contracted about the abnormal contents. Carcinoma, which will be mentioned later as a complication of gall-stones, possibly arises from the irritation which they cause. The pressure of the calculi upon the walls of the gall-bladder often brings about ulceration, perforation and the escape of the calculus.

2. *Obstruction.*—The most usual pathologic accident is an obstruction of the biliary ducts caused by the lodgment of a gall-stone. It is easy to imagine the occurrence of this accident, and as it is probably simply an accident, it has no definite cause. Turning in the gall-bladder and escaping through the cystic duct, the gall-stones are usually caught just at the beginning of the duct. There are reasons for supposing that when the stone does not enter very far it may subsequently slip back again into the gall-

bladder. The next most frequent seat of obstruction is the common duct. Much less frequent is obstruction of the hepatic duct.

Only small stones are capable of entering the ducts at all, and only small stones can cause obstruction. Schüppel believes that it is impossible for any stone of greater diameter than 1 cm. to enter or escape from the ducts. Large stones are occasionally passed by the intestine, but probably always through fistulous openings into the duodenum.

When a stone engages in the duct, it seems probable that the chief force which operates upon it to discharge it from the duct is the accumulating bile behind. In the case of the cystic duct, obstruction of which prevents both entrance and exit of bile, this can hardly be a sufficient cause, and as the amount of muscular tissue in the duct is thoroughly inadequate to explain the onward movement, it is probable that position and movement of the body aid in driving out the engaged calculus. Naunyn believes that the stones are driven on by the circular muscular fibers of the ducts, not, as Goodhart and others think, by bile pressure.

The passage of a gall-stone from the gall-bladder into the hepatic duct is not easily explained when the condition of the common duct is normal. Usually there is disease of the common duct in cases of this kind. Murphy found disease of the ductus choledochus in 45 out of 51 cases of stone in the hepatic duct.

The lodgment of a gall-stone gives rise to symptoms mild or severe, according to the seat of obstruction. The most characteristic are pain, from the dilating effect of the retained bile, icterus from absorbed secretion, and catarrhal inflammation of the duct. In some cases the seat of obstruction suppurates. When the stone is long retained cicatricial tissue forms an encapsulation around it consisting of thickened duct tissue. Carcinoma of the gall-ducts is almost invariably associated with engaged gall-stones, but it is impossible to prove that the stone preceded or caused the carcinoma.

(*a*) *Stone in the Cystic Duct.*—In spite of Schüppel's opinion, that only stones of 1 cm. in diameter can pass the duct, Murphy has seen one $\frac{5}{8}$ inches in diameter lodged in the cystic duct near the formation of the ductus choledochus.

The stone may partly or completely obstruct the duct. In the former case it has a kind of valvular action and may allow bile to flow into the gall-bladder, but prevent its escape, so that there is a continual dilatation of the organ. When, as is usual, the obstruction is complete, no bile enters, but the gall-bladder progressively increases in size from the retention of secretion formed in its walls by the glands there. This fluid is usually clear, watery and colorless, and originates a condition known as *hydrops vesicae*. The degree of distensibility of the gall-bladder is remarkable. It is not at all uncommon to find it the size of a child's head, and there is a case on record in which it contained 15 pints of liquid

(*Durian*). The fluid does not always have this watery quality. It may be viscid or slimy, or may be colloid in character. Where malignant disease is present it may be bloody. In cases with infection there may be empyema of the gall-bladder.

The lodgment of calculi in the cystic duct is not usually followed by jaundice. Considerable distention of the gall-bladder does not usually follow repeated attacks of cystic obstruction, because the local inflammatory reaction produces such indurations and adhesions as interfere with future enlargement. Sometimes one attack will be followed by an inflammatory reaction that will effect pronounced contraction and atrophy of the gall-bladder. In 87 cases of obstruction of the common duct observed by Courvoisier, dilatation of the gall-bladder occurred in only 17.

(*b*) *Stone in the Hepatic Duct.*—Murphy says that stones are formed in the hepatic ducts in only one per cent. of the cases of cholelithiasis examined at necropsy. The stones may be formed in the hepatic duct, or, as is much more frequent, enter it from the cystic duct. The obstruction is the cause of much pain, and causes icterus in about one-half of the cases. Fever seems to occur only when infection is present. Permanent lodgment of calculus is followed by the formation of a pouch or dilatation of the duct in which the stone lies, the bile flowing around it. Clinically, the disease is not well characterized because of its association with disease of the ductus choledochus, and stones in the gall-bladder.

Should the calculus or the cicatricial tissue which surrounds it, or the bile dammed back by it, obstruct the portal circulation by pressure, as is sometimes the case, changes commensurate with the extent of venous obstruction will occur.

(*c*) *Stone in the Ductus Communis Choledochus.*—Of 255 cases of cholelithiasis observed at necropsy at Basle, an obstruction was found in the ductus choledochus in 0.4 per cent. The stones usually originate in the gall-bladder and descend into the cystic, then into the common duct. More rarely they originate in the hepatic duct and descend into the common duct. Occasionally a stone is formed in the common duct and obstructs it.

It is interesting to note the observations of Courvoisier upon 177 cases, in 17 of which the calculus was found at the beginning of the duct, in 19 in its middle, in 20 close to the duodenum, in 41 in the papilla. In 26 of the cases the duct was full of stones. The duodenal end of the canal is smallest, and it will be observed that most of the stones collected here.

Enormous dilatation of the duct may occur after obstruction, a case being recorded by Frerichs in which it was 8 inches long and 5 inches wide.

The dilatation usually affects not only the ductus choledochus, but also the hepatic duct and its radicles. The gall-bladder is not always affected, but sometimes dilates. There is almost always icterus from lymphatic absorption of the bile from the distended vessels. Pain is usually pretty

severe and there may be vomiting. The presence of the stone usually excites catarrhal inflammation of the ducts; rarely there is suppuration. The stone may ultimately escape, or may make its exitus through a fistula, or may remain, producing a chronic cicatrizing mass of tissue about the stone.

3. *Perforation.*—It is not at all unusual for the gall-stones to escape from the gall-bladder and from the ducts in which they are impacted, by ulcerating through the tissues into neighboring viscera or to the surface of the body. From a study of the histories of 1,800 cases of cholelithiasis, studied by Courvoisier, perforation occurred 499 times, as follows:

Fistulous communications between different parts of the biliary system,	8
Perforation of the portal vein,	5
" into peritoneal cavity,	70
" " " peritoneal pouches,	49
" retroperitoneal,	3
" into stomach,	13
" " duodenum,	83
" " jejunum,	1
" " ilium,	1
" " colon,	39
" " urinary tract,	7
" " pleura and lung,	24
" externally,	196

As Murphy points out in discussing the subject, no collection of statistics can be accurate regarding internal perforations of which many are very probably overlooked. The fistulous communications between different parts of the biliary tract are of little importance from either a pathologic or clinical point of view. The perforation of the portal vein results from ulceration from pressure upon it. Stones have been found projecting into the vein. Thrombosis nearly always occurs.

The perforation of the peritoneum is usually very grave because of the infective processes which follow. Bile from a normal organ might be sterile and do no damage. In cases of gall-stones, however, the gall-bladder is almost invariably the seat of infective processes. Peritonitis with fatal termination is very frequent. It is, of course, impossible to determine how often perforation of the gall-bladder permits of the escape of gall-stones into the abdominal cavity without causing peritonitis. In all probability, however, it is not often, as gall-stones are rarely found in the abdominal cavity at necropsy, and few cases show signs of healed fistula. That they occasionally escape and leave communications with the peritoneum, is shown by a recorded case in which 27 liters of bile were aspirated from the peritoneum in 29 days. The patient had no peritonitis and subsequently recovered.

It can also with difficulty be determined how often gall-stones escape from the gall-bladder or ducts into the intestine, as they are often passed unobserved. Very large stones seem to make this their usual mode of escape, and not infrequently obstruct the intestine. Indeed, Kirmesson and Rochard have collected 105 cases of obstruction of the bowels caused by gall-stones. That such stones do not escape by passage through the bile ducts seems to follow after 36 autopsies mentioned by Murphy, in only three of which such a route could be demonstrated.

The urinary perforations may enter the pelvis of the kidney, the ureter, or the bladder. Courvoisier collected three cases of fistulous communication with the vagina. The gall-stones may escape through the urethra from the bladder, or, if large, may remain as vesical calculi.

Murphy mentions three ways by which fistulous communications with the thorax can occur. First, abscess of the liver resulting from an infection of the gall-tracts, followed by subphrenic suppuration, which finally perforates through the diaphragm and pleura into the pleural cavity or lung; second, through perforation of the gall-bladder, usually at the fundus, and the formation of an abscess with burrowing of pus into the subphrenic space without involvement of the liver, and the rupture of the subphrenic abscess into the pleura or lung; third, the formation of an abscess into the mediastinum from perforation of the gall-tracts and the subsequent perforation of the pleural cavity or lung. Courvoisier has collected 11 cases and Graham 7 cases of such thoracic fistula. In cases of perforation of the stomach, gall-stones have occasionally been vomited. Gall-stones may also at times find their way from the duodenum into the stomach and be vomited.

External perforation is most frequent, comprising nearly one-half. The opening is usually seen in the right hypochondrium at the margin of the ribs; next in frequency near the umbilicus; third, near the right iliac fossa. There are rare cases of remote perforation, Patheret having seen a case where the perforation occurred in the left flank.

The formation of the fistula may sometimes depend upon the eroding effect of the pressing calculus, but is more usually associated with abscess formation, burrowing of pus, and final opening with purulent discharge and escape of the calculus.

The outcome of fistula formation will vary much with the tissue, and with the infection, thrombosis, etc., that it occasions. It seems possible for stones rapidly to ulcerate through the tissues into the intestine (duodenum) without leaving behind them more than a rapidly cicatrizing wound which may entirely close. The most important result of fistula is probably the loss of bile from the intestine. In cases of external fistula it quite commonly happens that because of obstruction of the common duct, no bile escapes into the intestine, all passing out through the external fistula. Such cases are not necessarily serious.

Probably the most remote effects of the pathology of gall-stones are observed in connection with the heart, which has occasionally shown malignant endocarditis from infection from abscesses due to gall-stones.

4. *Fever.*—The obstruction of the biliary ducts by a calculus is not rarely followed by a febrile attack, somewhat closely resembling malaria, and now usually spoken of as "Charcot's Intermittent" or "Hepatic Intermittent Fever." The condition is ushered in by a severe chill, followed by pyrexia amounting to 104°, 105° or even 106° F. Following this, the patient sweats profusely, the temperature declines and an intermission occurs, followed by a repetition of the phenomena. Such a febrile condition may continue for several months, with paroxysms every week or two. A fatal termination is frequent.

It is probably this condition that led older writers to see a marked connection between gall-stones and malaria, and to suppose that malaria predisposed to the formation of gall-stones and the gall-stones to the precipitation of a paroxysm. The condition has nothing in common with malaria; its paroxysms are less regular, and the hematophylla are continually absent from the blood.

Hepatic intermittent fever has all the appearances of a toxic or infectious process. It is not pyemic, for it is not at all constantly associated with suppurations in the ducts. The few cases that recover do so after the expulsion of the calculus, which would indicate that whatever poison is responsible for the affection was retained by the calculus, though the intermittent fever is occasionally seen when the gall-stone is loosely held in the ducts, probably then depending upon more active infection than is usual.

CONCERNING IMMUNITY AND THE USE OF NORMAL NON-IMMUNIZED SERUMS.

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STERNBERG, whose patient and scholarly investigations in serum-therapy have received universal commendation, has stated "that no questions in general biology are more interesting from a practical point of view than those which relate to the susceptibility of certain animals to the pathogenic action of certain species of bacteria and the immunity, natural or acquired, from such pathogenic action which is possessed by other animals." Concerning natural immunity, he has stated that it seems probable that the germicidal property of freshly-drawn blood serum is *not* due to its alkalinity *per se*, but to the fact that the germicidal constituent is only soluble in an alkalin fluid.

The researches of Vaughn, McClintock and Novy indicate that this germicidal constituent is a nuclein. Kossel, of Berlin, has also demon-

strated that the germicidal constituent of blood serum is a nuclein. "The nuclein is undoubtedly furnished by the polynuclear white corpuscles."

To analyze the force we recognize as life is a task beyond the ability of the biologist or chemist. It is *this* vital force which antagonizes disease and death—explain it as we may! When we attempt to examine this wonderful phenomenon, we arrive at obstacles more impenetrable than the mighty ice cliffs which thwart the efforts of Arctic explorers searching for the "pole." Science without God is built upon the most useless foundation. Man must recognize the teachings of the book which is the foundation of all true learning, and to regard as worthless such teaching is to invite inevitable failure. When we study the subject of natural immunity we are in dangerous proximity to the most sacred secrets of nature and of nature's God.

In the development of serum-therapy the horse has been the animal chosen from which the stores of antitoxin (immunized serum) have been obtained. The fact that horse blood (non-immunized) normal serum is a natural antitoxin has been almost entirely lost sight of by the eager investigators seeking after artificial preparations. Nevertheless, some very distinguished bacteriologists in various portions of the world have become convinced that horse and goat blood normal serums are of positive value in the treatment of tuberculosis and of other wasting diseases. The method of employing normal serums is the same as that adopted with ordinary antitoxins and in about the same doses. Bernheim and others prefer transfusion, which the former thus describes:

[1]"I have satisfied myself by other experiments that the transfusion of blood from one animal to the other is not dangerous. I have, therefore, transfused goat's blood into man. The apparatus which I used consists of two trocars, joined by a rubber tube; the one, rather voluminous, is introduced into the carotid of the goat, the other, capillary, into the cephalic vein of the patient; 100 to 120 grams of blood may be transfused in one minute. The first sittings must not last longer than fifteen to thirty seconds, the subsequent ones more than one minute. I have thus treated two chloro-anemics, who were cured; seven tuberculous of the second, one of the first degree, who may be considered as cured, inasmuch as their general condition is good and the physical symptoms, as well as the bacilli, have disappeared."

In my investigations concerning the employment of normal serums, I have been greatly interested in a paper by Dr. T. M. Prudden on the germicidal action of blood serum. He says:

"The definite proof that a large number of the most important of human diseases are caused by bacteria has made promising glimpses into the domain of prophylaxis and treatment. The nature of the poison by which bacteria produce their effects on the body and the varying reactions of the

[1] See an article by the writer in the *N. Y. Med. Times*, February, 1898.

cells in the presence of these poisons form a series of problems which tax to the utmost the resources of both the chemist and the biologist. The question of immunity from bacterial disease, either natural or acquired, has from the first been a most potent stimulus to speculation and research.

"The various conditions of the body which evidently predispose it to the incursions of disease-producing bacteria, whether acquired by heredity, by exposure, or in any one of many possible ways, suggest most important, and as yet most obscure, fields of inquiry both at the bedside and in the laboratory.

"The application of our new knowledge to clinical observations, old as the science of medicine itself, teaches us that there is in the body some sort of adjustment of forces by which, under ordinary and favoring conditions, the deleterious effects of pathogenic bacteria are neutralized or limited and the organisms themselves disposed of."

In health the normal blood serum can so dispose of them. In disease, the functions are all more or less interrupted and the disease products offer food for the pathogenic bacteria to feed upon and increase. This we can antagonize by the introduction of normal serum to offset the morbid conditions. The condition of an engine in a steamship at sea when out of gear with its lack of harmony threatens disturbance, danger, destruction.

Continuing, Prudden says:

"The very occurrence of self-limiting diseases, such as typhoid fever, acute lobar pneumonia, etc., strongly suggests, if it does not prove, the existence in the body of some sort of bacteria-destroying agency. But a long series of animal experiments has definitely proven that a very considerable number of pathogenic micro-organisms may be introduced into the body to entirely disappear in a short time. To account for the disappearance of pathogenic bacteria in the body, either in the course of an acute infectious disease or as the result of exposures, which we may sustain unharmed, several more or less plausible theories have been evolved.

"First, the well-known theory of phagocytosis. Metschnikoff claims that this destruction of the life of bacteria by being taken into the bodies of certain cells—phagocytes—is the exclusive means which the organism makes use of in resisting the incursions of pathogenic bacteria. An animal whose leucocytes can successfully battle with and eat up a given species of bacteria, according to this theory, enjoys immunity from its deleterious effects."

It may be objected to the foregoing view that the dead bodies of germs are found within these phagocytes, but that they were taken in a living state and deprived of life within the phagocytes is by no *means* proved.

Prudden maintains that the leucocytes and other lowly organized cells are capable of taking up dead and used up material into their bodies, and that the leucocytes are more or less constantly engaged in transporting and disposing of such material in various parts of the body as a physiologic

process is well known. But the observers of phagocytosis have never demonstrated that the micro-organisms were alive when they were taken in, and unless this can be shown the theory cannot be established.

Nuttall's observations confirm the theory that it is some agent in the fluid constituents of the blood which destroys the germs. Büchner's researches confirm those of Nuttall. He found that the fresh blood serum of certain animals, freed from cells, had the power of rapidly killing various species of bacteria. The degree varies in different animals, Büchner has further shown, by experiments on blood serum by dialysis, that this germicidal power is associated with its albuminoid constituents. From his experiments Prudden concludes that fresh blood serum possesses a marked germicidal power.

These investigations prove that there exists "a natural defence of the organism against bacterial invaders—viz., a healthy condition of the blood. On the other hand, one of the most abundant of the pathogenic bacteria—the staphylococcus pyogenes aureus—appears to be quite invulnerable to this destructive agency. All these things are the result of the vital forces—vitality, life. Still is the whole subject one of Nature's tantalizing and well fortified secrets."[1]

And what is this secret of Nature? The blood impoverished, disease is able to enter and to develop. The tone of the blood restored by injections of normal blood or serum, and this treatment continued, not for a day or two, but until the system has received *decided* nourishment, then the strength of the disease is overcome and health reasserts itself. The serum-therapy of the future will be the use of normal (horse or goat) blood serum. Further light on this subject is contributed by a paper in the *Journal of the American Medical Association* of May 14, 1898, by Dr. John Madden, entitled "The Limitations of Serum-Therapy."

The following language is used by him:

"Granted, then, that the antitoxin is produced, it may act in two ways to effect a cure—by making further bacterial growth impossible, or by combining with and neutralizing the toxin as fast as it is produced until the bacteria cease from lack of pabulum to be virile. Indeed, it may be that the cell protoplasm, constantly bathed in the antitoxin serum, is in some unknown manner changed so that the toxin contact is no longer harmful and is eliminated without disease symptoms."

Referring to bacterial diseases, which are confessedly *not* self-limited—tuberculosis, syphilis, leprosy and the like—the statement is made that there is no evidence to show that these diseases produce an antitoxin. Dr. Madden goes on to say:

"Certain animals are partly or wholly immune from particular bacterial diseases. The rat cannot be inoculated with anthrax; the cow takes small-pox lightly, and the horse is immune from tuberculosis. In some instances the blood serum of the immune animal will destroy the

[1] *N. Y. Med. Record*, January 25, 1890.

bacillus of the disease against which it possesses immunity, as in the case of the serum of the rat against the anthrax bacillus. In view of this fact, the question arises whether the blood serum of an animal already naturally immune can be given *greater* bactericidal powers by injecting into the blood current the toxins of the disease against which it is immune. It can only be said that what evidence we have entirely supports the negative.

"Shall we say that the horse immune against tuberculosis, a non-self-limited disease, will therefore yield a valuable anti-tubercular serum when injected with the toxins of tuberculosis? Certainly this is absurd; yet it is just what has been done during the last two or three years. It certainly involves the height of credulity to believe that the serum of an animal immune against a disease is rendered valuable as a remedial agent for the same disease by injecting it with the *disease*-toxin without producing an antitoxin."

"Referring again to the use of immunized horse serum for the treatment of tuberculosis and the favorable results reported, it is quite probable that all the benefits received by the patients subjected to the treatment were due to the serum itself and not to any added value it possessed by reason of the animal having been inoculated with tubercle poison."

Dr. Madden then quotes the researches of one of the experimenters which I have already published. *Vide* a paper read at the meeting of the American Medical Association, 1896, on "The Use of Normal Horse-Blood Serum"—*Virginia Semi-Monthly Medical Journal;* on "The Use of Normal Goat-Blood Serum"—*New York Medical Times,* January, 1898; *Pediatrics,* February, 1898, etc.

Another valuable paper sustaining the position which we have assumed is by Dr. Luke Fleming, in the *New York Medical Record* of May 14, 1898.

"Different forms of life differ in their needs and choice of soil," says Dr. Fleming. "This is due not to any arbitrary instinct in the germ, but rather to its inherent necessities. The bacillus of typhoid finds in the secretions of the Pyer's glands its only human culture medium. It passes unharmed and harmless through all the secretions of the mouth, esophagus and stomach, down to its favorite spot in the small intestine, where it stops, grows, and propagates a colony. One of the products of this new life is a toxin which is absorbed into the system and causes *symptoms.* A germ disease lasts while the food supply lasts, becoming acute when the germ is active and supply limited, and chronic when the germ is slothful and the supply unlimited."

"The variation in mode of onset is surely due to something in the germ itself. The tubercle bacillus may so invade the lungs as to run an acute course very closely resembling pneumonia. The feature influencing the duration of disease is called individual resistance. It is owing to variations in this resistance that the tubercle bacillus creates an acute

disease in one patient and a chronic in another. The variation in resistance is due undoubtedly to variation in nutrition, a weakened resistance being the result of weakened nutrition, leaving the gateways of the system open through the normal secretions. *The secretions of the body, like the circulating blood, possess bactericidal powers,* but, owing to inherited features, coupled with vicious habits, these powers are in many cases lowered or lost. The duration of a disease caused by such a resistant germ, while depending ultimately on soil limit, is measured best by the individual resistance. A system temporarily off its guard allows a localized invasion; but by the absorption of the toxin, its glandular system is stimulated and again rallies, causing the disease to abort."

This result aborting the disease is due probably to improved hygienic conditions, but the fact stands, nevertheless, that increased individual resistance shortens the duration of this disease. The stronger the normal resistance the shorter the duration of the disease. Dr. Fleming is opposed to the theory that diseases are self-limited by the action of a substance called antitoxin and which is claimed to be the result of the toxin acting upon, or being acted upon, by some blood constituent. It is claimed that this antitoxin is foreign matter in the blood, that *every specific germ* has its own specific antitoxin and that a definite amount of toxin, injected artificially or absorbed naturally, results in the production of a definite amount of antitoxin, which neutralizes the toxin. This seems unreasonable; and the claim of those who believe in normal horse and goat blood serum as a general natural antitoxin is that it requires no assistance from any toxin, but that *normal serum is antagonistic to all toxins.* The chief support of this antitoxic theory comes from the apparent success attending orrhotherapy (serum-therapy). All these questions are easily understood and can be easily answered, if we but assume that the germ lives only while it finds soil to feed upon and while it lives it gives off toxin which is absorbed. This toxin in the blood on its way to be excreted acts accidentally as an irritant, stimulating normal glands. This stimulation enriches the blood in glandular secretions and *the blood serum of disease* thus possesses curative powers!

The pestilence rages in the village only while filth to breed upon is there. The sewage, although darkening at first the limpid stream and forming nasty green pools here and there, is nevertheless destroyed by the natural forces of fishes, sunlight and fresh air. When the sea is reached, the water is again sweet and pure.

So may we believe it to be with the human blood stream in disease; it takes up the toxins and starts with its burdens to its sea, the chambers of the heart. The fever due to increased oxidation is but an index of the effort being made to make the blood stream pure. The skin and kidneys are the human filtering sands. The phagocytes and leucocytes are but the fishes of a microscopic world; and while it may seem to some that this

figure is the result of poetic fancy, Nature through all her works rules in harmony.

Now it is admitted that scarlet fever is a self-limited disease; and, since the toxin is excreted, how is the antitoxin produced?

Dr. Fleming considers that one of the fatal errors in the antitoxin theory is that the *antitoxin* is held to be foreign matter in the blood. The tendency of the blood is to excrete all foreign matter, and the assertion that the antitoxin will remain in the blood from months to years is a standing refutation of the chapter on the blood in every text-book on physiology. If, on the contrary, we assume that the increased antitoxin power of the serum after disease is due to normal secretions in excess, we can easily see how this virtue may last for an indefinite period.

Since the toxins are consumed in the production of the antitoxin, to what are the symptoms of disease due? There is nothing, however, to disprove that this so-called antitoxin serum is not either a concentrated solution of normal resisting fluid or an irritant which acts by stimulating the normal glandular system. The chemistry of these serums is so absolutely dark as to render their use almost empirical. It is a remarkable thing, however, that the antitoxinists attribute this virtue to the *germ* and not to the system protecting itself through its own glandular secretions. We have in thyroid feeding direct evidence that we *can* supply a missing secretion; and since the blood serum is the medium from which all gland secretions are formed, and to which they finally return, why should not an injection of a concentrated solution of it add to the material already in the system and thus increase the probability of cure?

In a paper contributed by Dr. E. H. Hankin in the *Lancet* (August 15, 1891), he wrote:

"The view that *acquired* immunity was due to an alteration of the metabolism of the tissue cells either in general or at the seat of infection (Grawitz, Büchner) is now known as the phagocyte theory with which the name of Metschnikoff will ever be honorably connected. The supposition of Chauveau and others that immunity was caused by the presence of some unknown substance of bacterial origin is now overshadowed by the results obtained by many workers who have actually *found bacteria-killing substances in immune animals* whose nature and origin, however, appear to be very different from what Chauveau's theory might have led us to expect."

In 1888 *Nuttall discovered that various bacteria are destroyed when mixed with fresh blood or blood serum, and, further, that this destruction cannot be ascribed to the action of cellular elements, but rather to the fluid part of the blood.*

This discovery (which really arose from the German criticism of Metschnikoff's phagocyte theory) was soon followed by the work of Büchner and Wissen, and these observers came to the conclusion that this bactericidal action of the cell-free blood serum is a mighty factor in the conflict between the organism and the microbe. Bouchard confirms this view, saying:

"Immunity, whether natural or acquired, is due to the presence of substances which are formed by the metabolism of the animals rather than by that of the microbe, and which have the power of destroying either the microbe, against which immunity is possessed, or the products on which their pathogenic action depends."

Hankin solves the question as to what is the nature of the substances on which this bactericidal action of blood serum depends. He refers to the statement by Buchner, that the bacteria-killing action of blood serum is due to a remnant of the *vitality* that had been possessed by the blood plasma from which the serum was derived.

His theory (Hankin's) is that the bactericidal action of blood serum is due to the presence of "defensive proteids." The vitality theory of Büchner has been abandoned, and even he admits the importance of defensive proteids and suggests for them the name alexins. Defensive proteids appear to be ferment-like albuminous bodies. Hankin divides them into two classes: First, those occurring naturally in normal animals; and, secondly, those occurring in animals that have artificially been made immune. For these two classes he proposes the names sozins and phylaxins. A sozin is a defensive proteid that occurs naturally in a normal animal. They have been found in all animals yet examined, and appear to act on numerous kinds of microbes or on their products. A "phylaxin" is a defensive proteid, which is only found in an animal that has been artificially made immune against a disease.

Myco-sozins are defensive proteids occurring in the normal animal which have the power of acting on the various species of microbe. Toxo-sozins are defensive proteids, also occurring in the normal animal having the power of destroying the poisons produced by the various microbes. Myco-phylaxins and toxo-phylaxins denote two subclasses of the phylaxin group.

In conclusion, we may state that when first the use of normal serum was proposed in this country only those who were able to furnish the required animals from their own stables could obtain this *normal* serum, unless by exceptional favor. Normal serum was with difficulty recognized as a practical portion of serum-therapy. For the past three years I have labored to bring the matter to the attention of the profession, as worthy of employment in wasting and other diseases. My first paper was read at the meeting of the American Medical Association in 1896, and I have contributed several papers since to our medical journals. I found it difficult to interest any one in preparing the serum, but now abundant supplies can be obtained from Messrs. Parke Davis and Company, who have made all the arrangements necessary to manufacture the non-immunized (normal) horse-blood serum in any quantity required, having added to their laboratories and stables a special department of normal serums. Physicians can now be supplied with these preparations, together with the appliances necessary to carry out this new departure in serum-therapy.

TALKS TO GENERAL PRACTITIONERS.

FUNCTIONAL DISTURBANCES OF THE OCULAR MUSCLES.

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Part II. *Tests.*

A PRISM deflects rays of light toward its base, and if such a glass is placed before an eye, the rays of light entering that eye will be so bent from the visual axis that unless the eyes are turned accordingly, double vision (diplopia) will result.

THE STRENGTH OF THE OCULAR MUSCLES

is measured by the degree of prism that they can overcome and still maintain single vision. To test the adductors, prisms are placed, bases out, before one or both eyes, and the patient is instructed to look at a fine flame of light at six meters distance, and the strength of the prisms is increased until two images of the flame are seen, and cannot be further fused. In testing muscular strength and muscular balance, both eyes are tested at once, and it does not matter whether the prism is placed before the right or the left eye, or whether its strength is divided between the two eyes. Healthy muscles will show an adducting force of about 30°; that is, they can maintain single vision, with 30° of prism-strength, base out, before them. To test abduction, the prisms are placed bases in. The normal abducting power is about 7°. The normal relation of adduction to abduction (about four to one) should be maintained. Deficiency of adducting power renders prolonged convergence in reading very tiresome, and is the source of many asthenopic symptoms. It is not uncommon. For this reason the adduction-test is very important. The supraduction and infraduction need be tested only in cases of hyperphoria. The prisms are placed before the eye bases down and bases up respectively. To overcome a prism base down before one eye, the superior rectus of that eye and the inferior rectus of its fellow are put in action; that is, one eye is turned up and the other turned down, to straighten the visual lines. In overcoming prisms bases out or bases in both eyes are turned out or in simultaneously.

To Test for Heterophoria,

we place a prism before one eye and a red glass before the other. If the image colored red is on the same side as the red glass, the case is one of homonymous diplopia; that is, the eyes have a tendency at rest to turn inward. If the red image is on the opposite side to the red glass, the case is one of crossed or heteronymous diplopia, that is, the eyes have a tendency to turn outward.

A 6° prism, base up or base down, is placed before one eye and a red glass before the other. Two images of a light at six meters' distance are seen. If the red image is on a vertical line with the other, there is orthophoria; that is, no muscular imbalance exists. If the red glass is before the *left* eye and the red image is above or below the other and to the *left* the case is one of esophoria, and the amount imbalance is measured by the strength of prism held base out before the left eye that will put the red image exactly on a vertical line with the white image. If the red image is to the *right,* the case is one of exophoria, and is measured in the same way.

If diplopia is produced by a prism held base in or out before the right eye, and a red glass is held before the *left* eye, and the two images are in an exact horizontal line, there is no disturbance of the muscular equilibrium in this plane. If, however, the red light is *above* or *below* there is hyperphoria, measurable by the prism held, base up or base down, before the left eye, which brings the two lights on a horizontal line.

The Maddox Rod

consists of a small glass rod mounted in a cell which, acting as a strong cylinder, distorts the natural image of a flame at six meters into a streak or line of light. This device may be used instead of the prism and colored glass. The Maddox rod is placed *horizontally* before the *left* eye, and the right eye is unobstructed. The patient sees a natural light and a *vertical* streak of light. If the streak passes through the light, there is orthophoria. If the streak passes to the *left* of the light there is esophoria, measurable by the prism, base out, before the left eye, which will cause the streak to pass through the light. If the streak passes to the *right* of the light, there is exophoria, measurable with prisms bases in. The rod is then turned *vertically,* and the patient sees a light and a *horizontal* streak. If the streak passes above or below the light, there is hyperphoria, measurable with prisms, bases up or bases down, as the case may be.

Rotary Prisms and Phorometers

are instruments designed to facilitate oculo-motor tests; but they are unnecessary. For all practical purposes, accurate tests may be made in the simple manner herein described.

DIAGNOSIS AND TREATMENT OF CHANCROID (SOFT CHANCRE).

BY J. D. THOMAS, M.D.,

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THERE are two varieties of venereal sores—one the soft sore, or soft chancre; the other the true, or hard, or Hunterian chancre. The chancroid is a local sore, producing no constitutional infection; the true chancre is also a local sore, but invariably and inevitably producing systemic infection.

That chancroid is due to a micro-organism I believe. Ducrey, Welander, Krefting, Unna and others claim to have discovered the microbe, but as pure cultures, up to the present time, have not been made, the matter is necessarily still *sub judice*. But reasoning from analogy, we are logically forced to this conclusion. The chancroid is a venereal sore which is almost typical, and is propagated from a preceding similar sore. The tendency of chancroid to multiply is *sui generis*, and this is so marked that it stamps it as a different sore from any other with which we are acquainted. It is true that there are occasionally non-chancroidal sores met with that very much resemble chancroid, but they are no more chancroids than is the eruption that sometimes follows the administration of copaiba, scarlatina. I have seen such mistakes made.

The following experience may be interesting: A young man consulted me with regard to a sore which he had upon his penis, following an intercourse had six days before. To my mind, the sore was an undoubted chancroid. Before direct examination, he volunteered the statement that he had had syphilis two years before. In a few days he again visited me, accompanied by a friend who had had intercourse with the same female. The friend also had a chancroid. This latter patient was a non-syphilitic. Neither patient was exposed to any other source of contagion. Here we have a syphilitic and a non-syphilitic acquiring a similar disease from the same woman within a few days of each other.

In a well-developed case the diagnosis is not difficult; but before expressing an opinion the history of the case should be thoroughly gone into. A chancroid lesion makes itself manifest from the third to the fifth day; sometimes as late as the tenth. It is primarily a pustule, but as the pustule has ruptured, as a rule, before the patient presents himself, and as the laity cannot distinguish between a pustule and a vesicle, the diagnosis must not be based upon their statement. The sores are multiple, or soon become so (spontaneous auto-inoculation); they are round, oval or elongated. The elongated sores occur in the furrows about the prepuce or

elsewhere. The edges are well defined and the base secretes freely. If neglected, the skin becomes undermined and breaks down. When the poison enters the mouth of a follicle it may burrow without much surface indication and an ulcer will appear suddenly. Herpes is preceded by itching, and a group of vesicles soon appears—usually simultaneously—the secretion being watery. Chancroids, as a rule, follow each other. Herpes sometimes appears to be an idiosyncrasy, *i.e.,* some suffer from an attack after each coitus. Herpes recovers promptly with mild treatment. An abrasion is single, superficial, and is observed immediately when received. Chancre is of slow growth, not destructive, indurated and accompanied with slight secretion. Herpes, abrasions and chancre are not followed by inflammatory bubo.

As a mixed sore is sometimes met with, this fact should always be borne in mind when expressing an opinion to the patient.

The treatment of chancroid varies; depending upon, when first seen, the *tendency* of the ulcer and the physical condition of the patient. If seen early, it should be thoroughly cauterized. My preference is fuming nitric acid. This is to be preceded by cocain and peroxid of hydrogen; the former to mitigate pain, the latter to cleanse. The acid is applied with a pointed stick. In this way the application is under control, all superfluity is absorbed by the wood, and the medicament is uniformly applied, and not in drops, as with a glass rod. After the specific character of the ulcer is destroyed, my favorite dressing is acetanilid. Bismuth, calomel, boric acid, aristol or any of the non-irritating antiseptics may be used. When the ulcer takes on a healthy character, no further cauterizing is necessary. I have frequently seen healing prevented and the ulcer made larger by continual burning, burning, day after day.

When more than one chancroid exists, all must be cauterized. If some of the ulcers cannot be reached, for example, when under a swollen prepuce, it is useless to cauterize those that are accessible, for they will again become infected. Such cases may frequently be successfully treated by carefully cleansing with peroxid of hydrogen followed by black wash (lotio nigra, U. S. P.). A penis syringe with a moderately long nozzle may be used for this purpose. If the bichlorid solution is used it must not be too strong, for it will set up a dermatitis with erosion of the integument. $^1/_{4000}$ is strong enough to begin with. However, if at any time it should be feared that serious destruction of tissue was taking place under the swollen prepuce (inflammatory phimosis), then splitting the prepuce, or circumcision, should be immediately practiced. Although the cut surface will become infected, it is an evil that cannot be avoided. I will here state that of late years I have not been obliged to resort to this measure, the thorough cleansing as above indicated being sufficient.

If the chancroid comes under observation after it has existed for ten days or more, and if it is found that it has a tendency to run a favorable course, cauterization is unnecessary; thorough cleanliness and antiseptics

being sufficient to conduct it to a rapid healing. If unnecessarily cauterized a slough will result, with a serious loss of time to the patient. However, it matters not when the chancroid is first seen, if the ulceration is progressive or destructive in its character, the nitric acid should be used.

With regard to the suppurating bubo, again, the treatment must be varied. Some of these patients persist in being ambulant throughout. In such cases I sometimes pass a double thread through the upper limit of the abscess and bring it out at the bottom, thus securing drainage. In addition, the cavity is washed out, along this drain, with a weak solution of bichlorid of mercury or carbolic acid, and recovery takes place without further breaking down of tissue with a minimum of scarring. In the meantime, a pad moistened with the antiseptic solution is worn over the seat of the bubo. When I can induce the patient to permit it, the cavity is laid open freely, washed, curetted, washed again and sutured, with the object of securing primary union, which can sometimes be secured. If failure is the result, then packing with iodoform gauze is practiced.

If the bubo is a virulent one it must be treated on the same lines as the original chancroid.

I believe that the removal of the inguinal glands by dissection is bad surgery and is subjecting the patient to a major operation. If the bubo is a simple one, curettment with suturing or draining is efficient. If the bubo is a virulent one, under any treatment the wound assumes the character of a chancroid and the dissection would be a barbarism.

At the present day phagedenic or serpiginous chancroids are seldom seen. If they should be seen, curetting with continual antiseptic irrigation would be the proper treatment and at the same time tonics should be administered.

GENERAL CONSIDERATION OF MUCOUS MEMBRANES OF THE UPPER RESPIRATORY TRACT.

BY D. BRADEN KYLE, M.D.,

Clinical Professor of Laryngology and Rhinology in the Jefferson Medical College; Consulting Laryngologist, Rhinologist and Otologist to St. Agnes' Hospital, Philadelphia, etc.

(*Concluded.*)

It is a well-known fact that in anemia there is edema, leakage of serum from the kidneys, and in some instances intestinal changes, such as watery diarrhea. In these cases the respiratory membrane will also show a thin, slightly albuminous, watery exudate. This is especially true in children, and is due in a large number of cases to the intestinal irritation or any faulty nutrition.

The shape of the nostril has much to do with the so-called catarrhal diathesis; not infrequently patients will say they have inherited catarrh, when, in fact, they have inherited the family nose, the narrow, slit-like nasal cavity, so straitened that the least congestion of the mucous membrane closes the nose by narrowing the lumen of the nares and lessening the size of the nasal cavities. For, backed up as the mucous membrane is in this locality by bone or cartilage, it can distend in but one direction; that is, toward the lumen of the air passage and away from its resistant background. The free passage of air and perfect drainage are interfered with, thereby causing an accumulation of secretion, which, by its presence and infection, irritates the mucous membrane and produces some form of rhinitis.

Too much importance cannot be attached to nasal breathing and its effect on the mucous membrane. Many cases of disease of the nose and throat necessitate mouth breathing, which, if continued for any length of time, produces a marked effect on the general health. It is also important in children, since obstructed nasal breathing with the continued forced inspiration and snuffling, especially in early life (one to three years), by the drawing down of the facial muscles may draw in the upper jaw and alter the contour of the upper arch. The hard palate, instead of forming the perfect dome, is moulded into a high arch.

The change produced in the blood is well shown in a series of blood counts made by the writer in cases in which there was nasal obstruction, the counts being made before and after the removal of the growths. In every case, before removal, the red corpuscles (the oxygen carriers) were reduced to 3,000,000, and in some instances as low as 1,500,000, with the hemoglobin reduced to 30 or 50 % of normal, and in many cases with slight increase of the white corpuscles. After removal of the obstruction, both hemoglobin and corpuscles gradually increased to the normal. Occupation also causes mouth breathing, as is seen in engineers, car-drivers, train-men, motormen, and I must add bicycle riders. The tendency in these cases is to keep the mouth slightly open, and in many patients of these classes marked alteration in the mucous membrane of the pharynx and larynx will be found, due to irritation caused by direct inhalation of dust.

It is essential that the lining membrane of open cavities should be soft, moist and pliable. This is especially true of the nasal cavities where the surface is exposed to the drying action of the air. The anatomic arrangement and physiologic function fortunately counteract this latter tendency. The anatomy of the mucous membrane is the same wherever found, with slight variation as to function and layer of epithelial cells. Where the function of the epithelium is protective in character, it is found in several layers; where secretion is essential, there is usually but one layer. Thus on the tongue many layers are found, while in the tubules of the stomach, in the acini of the glands, and in the tubules of the kidney but a single layer exists.

Where protective or propulsive force is needed the epithelial cells are supplied with cilia, as in the bronchi and anterior nares. Epithelial cells possess the faculty of manufacturing from supplied nutriment new chemical compounds, as is seen in the secretion of the salivary glands, the gastric follicles and the pancreas.

Every mucous surface is, then, as it were, a laboratory by which is elaborated material, of which the most constant is mucus. When altered by disease its physiologic product is changed and does not serve its proper function, for it prevents the excretion of an agent for which the organism has no further use. The degree of this perversion of cell activity largely controls the classification of mucous membrane diseases. As cellular function is controlled by nutrition, and as the epithelial layer is dependent upon the sub-epithelial layer for its nutriment, any alteration in these substructures, local or constitutional, must necessarily affect the functional activity of the superimposed cells. It must be remembered, then, in treatment of this sensitive, delicate structure, that it is controlled by, and is dependent upon, underlying and associated structures, and that outside of mechanical obstructions, either in the form of growth or foreign bodies, occupation irritation (pneumonokoniosis), trophic and atrophic conditions, the apparent local lesion is a local manifestation of some constitutional or organic abnormality.

The function of the mucous membrane is to secrete mucus, to offer an absorbent surface and to afford a smooth, moist, pliable and protective lining to the open cavities, that is, those communicating with the exterior of the body. The follicular and mucous glands secrete, while at the same time the epithelial cells elaborate, mucus. The rapidity with which fluids are absorbed is a physiological characteristic of mucous membranes. This action depends, with few exceptions, largely on the number of layers of epithelial cells.

Many cases of supposed lesion of the mucous membrane are what might be termed "traumatic"; for example, in an irritation producing reflex cough, the very act of coughing itself produces sufficient irritation to keep up a slight inflammatory process in the laryngeal or pharyngeal mucous membrane. Frequently, I believe, the lingual tonsil, from some inflammatory condition, is the real etiologic factor in many cases of supposed pharyngeal or laryngeal cough.

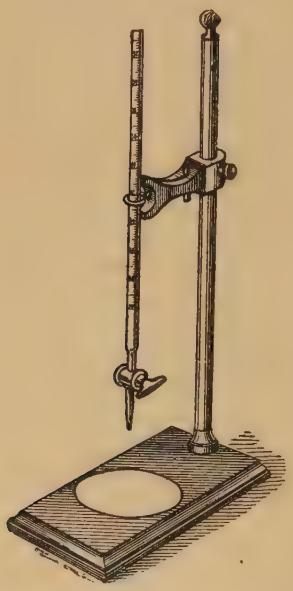
From a diagnosis standpoint, too much importance cannot be attached to the urinary examination, both chemic and microscopic, as it is a good index to the general systemic condition and will show any perversion from the normal. Equally important are examinations of the sputum and the blood.

The Action of Neuenahrer Sprudel on Gastric Digestion. Wendriner found that this salt has very slight influence on the secretion of HCl and mucus. On the other hand, it increases markedly the motor power of the stomach. The secretion of pepsin is also increased.

THE MORE IMPORTANT QUANTITATIVE TESTS OF THE STOMACH CONTENTS.

BY BOARDMAN REED, M.D.

In the number of the INTERNATIONAL MEDICAL MAGAZINE for December, 1898, I described briefly the simpler qualitative tests of the stomach contents.[1] It was by no means then intended to convey the impression that the other tests usually made by specialists are not necessary. In fact, most of them are really indispensable to an accurate diagnosis. But the almost universal neglect to make any tests whatever of the gastric contents, except in very serious and advanced cases in which cancer of the stomach is suspected, led me to consider it improbable that you, as general practitioners, would be particularly interested in the quantitative tests. Nevertheless, certain of the latter should be understood and employed by every physician in the stubborn dyspepsias, unless the help of a specialist is to be invoked in all such cases. By means of a recently discovered method, the more important quantitative tests can be readily made by any one possessing even a minimum amount of chemical knowledge; and this series of talks would be incomplete without an account of them.



The only additional apparatus absolutely required is a graduated cubic centimeter measure and a burette, which can be obtained at a trifling cost. The burette to be used is the same instrument mentioned in my talk entitled "Some Often Neglected Points in Examinations of the Urine," which appeared in the number of the INTERNATIONAL MEDICAL MAGAZINE for February, 1899. (See accompanying illustration.)

Premising that you have already made the Güntzburg qualitative test for free hydrochloric acid, described in the previous talk above referred to, I will describe to you how you may determine most readily by a series of associated tests the quantities present of (1) free hydrochloric acid, (2) combined chlorin (*i.e.*, the HCl loosely combined with the albuminoids of the food), and (3) the total acidity or sum total of all the free and combined acids, mineral and organic. This is called Toepher's method, and, while less scientifically accurate than some of the very

[1] This and four others of the writer's talks on subjects connected with diagnosis and treatment of gastro-intestinal diseases have been republished in the form of a brochure, which may be had of E. B. Treat & Co., 241-243 West 23d Street, New York.

elaborate ones, it is reliable enough for practical clinical purposes in all cases in which even a trace of free hydrochloric acid is present, and also in other cases, except those in which there is at least 0.2 % of lactic acid, or a large excess of the organic acids present, as shown by the characteristic odor of vinegar or butyric acid.

In chronic, painful, or flatulent indigestions the treatment, medicinal, dietetic and mechanical, should be very different when there is a deficiency of hydrochloric acid from that imperatively demanded when there is persistently a decided excess of the same, as happens in fully one-half of all such cases.

In the former condition (hypochlorhydria) it is proper to administer hydrochloric acid and pepsin freely as medicines, order a stimulating diet, including meats, hot, well-salted soups (except in dilatation of the stomach), as well as a moderate use of condiments, wines, etc., and to have daily vigorous massage of the abdomen. In the condition of hydrochloric acid excess (hyperchlorhydria), on the contrary, all the above-mentioned prescriptions would tend to aggravate the disease and we must administer full doses of alkalies, forbid abdominal massage, and allow only the blandest and most unstimulating diet, including milk, eggs, butter, vegetable purees, maccaroni and the gluten preparations generally, along with a moderate amount of the farinacea, including especially the more finely ground and bolted cereals made into mushes, thoroughly cooked, and taken with cream or rich, new milk.

The total acidity is equally important. When there is an absence of free hydrochloric acid, even though the amount of the combined chlorin should not have been determined, the finding of a high total acidity—above 60—would point to an excess of organic acids from fermentation, while a very low total acidity—15 or below—would speak in favor of either more or less complete gastric atrophy, or a temporary paralysis of secretion from various causes.

For the Toepher test, you will need, in addition to the burette with graduated measures, pipettes and cups or glasses holding two or three ounces, several chemical solutions, as follows: A $^1/_{10}$ normal solution of caustic soda, with which the burette must be filled, preferably up to the zero mark, before beginning; then, besides, the following three solutions to be used as indicators: (1) A ½% alcoholic solution of dimethyl-amido-azo-benzol; (2) a 1% watery solution of alizarin, which is known chemically as alizarin monosulphonate of sodium; (3) a 1% alcoholic solution of phenolthalein. The soda solution and the indicators No. 1 and No. 3 have been already mentioned in previous talks.

No. 1 does not react to combined hydrochloric acid or acid salts of any kind, nor to moderate amounts of the organic acids, especially in the presence of peptones, but gives a brilliant red color with the faintest admixture of hydrochloric acid in the free form.

No. 2 produces a clear violet color when mixed with a solution containing any of the acidities to be found in stomach contents, except that arising from the presence of combined hydrochloric acid, or, as Van Valzah and Nisbett well express it, alizarin "is sensitive to all the factors of gastric acidity except the combined HCl."

No. 3 only produces its characteristic dark red color in the stomach contents when all the elements of acidity, including free and combined acid of every kind, have been neutralized by the soda solution.

To make the three tests, (*a*) measure into a beaker, or glass of any kind, 10 c.c. of the filtered stomach contents (though 5 c.c. will answer for each of the tests, when an insufficient amount of the contents has been obtained) and add to it two or three drops of the No. 1—dimethyl-amido-azo-benzol. A brilliant carmine color is produced if there be the slightest proportion of free hydrochloric acid present. If this results, add the soda solution from the burette, drop by drop, till the bright red begins to fade to a dingy, reddish yellow. This shows that all the free hydrochloric acid has been neutralized. Be careful to stop when the fading from the bright red first becomes decidedly apparent. Suppose the result of this process (called technically a titration) to show that 2.5 c.c. of the standard soda solution were necessary to neutralize 10 c.c. of the gastric contents. This would be equal to ten times 2.5, or 25 c.c. of the solution for 100 c.c of contents, and all such calculations are made upon the basis of 100 c.c. The amount of free hydrochloric acid would, in this instance, be expressed arbitrarily by the figures 25 by some authors, while others figure out the exact equivalent percentage of free hydrochloric acid by multiplying the finding 25 by the fraction .00365, which has been found to represent very nearly the amount of hydrochloric acid which each c.c. of the soda solution will neutralize. Making this multiplication thus, $.00365 \times 25 = .09125$, and we obtain the decimal fraction .09125 as expressing the percentage of free hydrochloric acid present.

(*b*) Next, to 10 c.c. of the stomach contents add two or three drops of the No. 2 (alizarin solution) and titrate, that is, let the soda solution flow into the mixture, drop by drop, until it changes it to a clear violet tint. Suppose 6 c.c. of the soda solution to have been used in this titration, we multiply by 10 to find the aggregate amount of the free hydrochloric acid, organic acids and acid salts, but not including the combined hydrochloric acid, *i. e.*, the HCl combined with the albuminoids of the food. It will be remembered that alizarin reacts to all the elements of acidity in the stomach except the combined hydrochloric acid. We have then obtained the figure 60 as representing conveniently the amount of these combined acidities in 100 c.c. of the fluid being tested. As only a small part of this is composed of HCl in any form there is clearly no excuse in this instance for multiplying the figure 60 by the fraction .00365 to obtain its equivalent value in terms of hydrochloric acid.

(*c*) We determine by a third titration the aggregate of all the acid elements, mineral and organic, free and combined, in the fluid under examination, to obtain what is called its total acidity.

To 10 c.c. of the fluid in a third vessel we add two or three drops of the No. 3 (phenolphthalein) and allow the soda solution to flow in as before. Soon a circle of red will surround the drops of the alkalin solution as they fall into the stomach contents, fading out again as the acids at first quickly neutralize it. Later the whole becomes a light rose red, showing nearly complete saturation, but Hemmeter, as it seems to me, very properly, insists that we should go on adding the soda until each drop, as it falls in, no longer darkens perceptibly the mixture. Then neutralization is complete.

Suppose, for example, 8 c.c. to have been used in this titration, we multiply by 10 and obtain 80 as the total acidity.

Thus we have by these three titrations ascertained directly the percentage of free hydrochloric acid and the figure which represents the total acidity. Now, as the third titration (*c*) determines the sum total of all the acidities present, and the second titration (*b*) reveals the amount of all the acidities except the combined HCl, it is manifest that we have only to subtract the result of (*b*) from that of (*c*) to obtain the amount of the combined hydrochloric acid.

Making this subtraction with the hypothetical figures above given, we have 80—60=20. In this instance, it is proper to multiply the 20 by .00365 in order to obtain the actual percentage of combined hydrochloric acid present. In the supposed case this would be $20 \times .00365 = .0730$.

This may seem complicated, and a little puzzling at first, but when one has conveniently at hand the reagents and the few appliances required, the actual processes of titration may be easily and quickly performed, while the calculations are simple enough.

The three steps may be thus briefly summarized:

(*a*) Find how many c.c. of the soda solution are required to neutralize the measured amount of the stomach contents with No. 1 as an indicator, and multiply this by 10, if 10 c.c. of the contents are being tested, or by 20, if only 5 c.c. are under examination. Set down the product.

(*b*) Find how many c.c. of the soda solution are needed to neutralize a like portion of the stomach contents with No. 2 and multiply as before to obtain the result for 100 c.c.

(*c*) Find how many c.c. of same solution are needed to neutralize an equal portion of the stomach contents with No. 3, and multiply as before. Subtract the result (*b*) from that of (*c*) and note the remainder. The result of (*a*) multiplied by .00365 gives the percentage of free HCl, the remainder of (*b*) from (*c*) multiplied by the same fraction gives the percentage of combined HCl, and the figure obtained by (*c*) represents the total acidity.

REPORTS OF INTERESTING CASES.

A SUPERNUMERARY GLANS PENIS.

BY THOS. B. FOWLER, M.D.,

Editor of The International Medical Magazine:

In contrast to a case of "Congenital Absence of the Glans Penis," reported in the March issue of your journal (page 211), I wish briefly to record what might be termed a congenital supernumerary glans penis, in a child about three years of age. The extra glans was a complete duplicate of the other, with the exception that it was imperforate, being attached just beneath and posteriorly by a small particle or neck. What would naturally be called its under surface was turned upward, facing the lower surface of the normal gland. Both were of same size and covered by a common foreskin, and it was not until the growth of the organ forced it—the extra glans—beyond its covering that the anxious mother made the discovery. The extra glans was removed with the knife, the resulting wound healing nicely in a few days.

Cohocton, Steuben Co., N. Y., March 27, 1899.

THE SURGEON'S CONSULTANT.[1]

Trephining, Tracheotomy, were well within his line,
In shock and amputation he succeeded every time.
His fame spread East, his fame spread West,
This surgeon of to-day:
The man who came in ambulance (with light purse) *walked* away.

But Doctor Q. Pid heard his fame, and, jealous at the sound,
Set out to meet the Surgeon upon his daily round.
He aimed an arrow—twanged his bow, with archer's graceful ease;
The Surgeon fell, a victim to a chronic heart disease.

From East, from West the doctors came; in vain they used their art;
The wound was deep, the shaft remained fast in the Surgeon's heart.
The doctors dosed and diagnosed, the Specialist heaved a sigh,
Useless the wire of Dr. Bill—the Surgeon had to die.

At last, in desperation, in this seeming hopeless place,
They called a woman to their aid, and gave to her the case.
She cooled the fever, calmed his pulse—his strength came as of old;
She used for her ligation a simple band of gold.

The antidote she thus prescribed at once removed all pain.
She hypnotized the Surgeon, who was soon himself again.
Trephining, Tracheotomy, are still within his line,
But for arrow and heart wounds, he calls a woman every time. A. C. H.

[1] Response of Dr. E. W. Holmes, 1930 Chestnut Street, Philadelphia, to the toast, "The Women Doctors," at the farewell banquet given to Dr. John Guiteras by the Guiteras Medical Society of Philadelphia. From the pen of his daughter.

REVIEW OF MEDICAL AND SURGICAL PROGRESS.

INTERNAL MEDICINE GENERALLY.

UNDER THE CHARGE OF

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AND

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On the Etiology of "Phlegmones Emphysematosae" and "Emphysematis Hepatis." Kvjatkowsky (*Bolnitshnaja Gaz. Botkina,* Vol. X., Nos. 11 and 12), after an exhaustive review of the literature on this subject, adds three more cases of this affection to the many others observed by Arloing, Fraenkel, Levy, Welch, Nuttal, etc. One is that of a young peasant who died in consequence of a compound fracture received from a fall. During life emphysema developed in various parts of the body. Autopsy revealed fatty degeneration and emphysema of the heart, liver and kidneys, pulmonary edema, emphysema of the pia mater, phlegmonous emphysema of the right humerus, etc. No microscopic or bacteriologic examination was made. The second case was that of a man, 31 years old, who died from septicemia following a urethrotomy performed for the relief of a stricture of the urethra. Autopsy showed parenchymatous degeneration of the heart and liver, pulmonary edema, chronic parenchymatous nephritis, phlegmonous emphysema of the femur and right gluteal region. The skin in many places crepitated. On microscopic examination were found cocci and thick bacilli, 4 μ long, with rounded ends, occurring often in pairs. They stained with Gram's solution, showing a non-staining capsule. In cultures on agar 3 kinds of colonies developed: streptococci, yellow staphylococci and the above described bacilli. The latter were also successfully cultivated on agar in the absence of oxygen. Stab cultures on plain and glucose-agar were followed in 24 hours by a rather slow growth with the development of gaseous bubbles which increased in number during the following few days. The same phenomena were observed on gelatin cultures. The gelatin was not liquefied. On potato the colonies were hardly noticeable by the naked eye and appeared in the form of a shining streak. Milk was coagulated in 24 hours with the formation of a foam. Bouillon became clouded, and a slight sediment formed within 24 hours. Experiments on animals showed this bacillus to be pathogenic to white mice and rabbits, the former being killed in 17 hours, the latter in 3 weeks. The injection of a pure anerobic culture in a

dog was followed by considerable infiltration at the site of inoculation, the exudate showing the presence of the bacilli. Microscopic examination of the tissues disclosed degeneration of the muscular fibers, infiltration of leucocytes, dilatation and hyperemia of the blood vessels of the connective tissue with a tendency to stasis and thrombosis; and, finally, formation of empty spaces. Similar observations were made on the third case of a woman who died as a result of typhoid fever complicating puerperium. On autopsy the spleen and liver were found to contain numerous air sacs of the size of a millet seed. The author comes to the following conclusions: (1) The bacillus observed in the last 2 cases is the "bacillus aerogenes capsulatus," or, as called by Fraenkel, "bacillus phlegmones emphysematosae." (2) It differs from bacillus coli communis by the presence of a capsule, non-motility, staining by Gram's method and peculiar growth on potato; from bacillus edematis maligni by non-motility, presence of capsule, staining by Gram's and growth on gelatin; from bacillus of Rauschbrand by non-motility, staining by Gram's, growth on gelatin and absence of spores. (3) The pathologic processes observed are produced prior to death and are not due to *post mortem* changes. (4) The bacillus is most often, if not always, found in the places where the pathologic processes occur, being often associated with the pus-forming cocci. (5) It can be reasonably supposed that the entrance of this bacillus into tissues subjected to acute suppurative inflammation produces a specific effect, which leads to the formation of gases and disintegration of the tissue elements. (6) This bacillus enters and spreads in the organism by way of the lymphatics and veins. A. R.

Lavage for Headache. Peck (*Yale Med. Jour.,* May, 1899), in an article upon the treatment of headache, calls attention to Herter's method of washing out the stomach for migrainous headaches. The stomach—even if empty—is washed out with water at a temperature not less than 105° F. When lavage cannot be used, hot water should be drunk. The procedure relieves the pain, and if used at the outset may abort the attack. The rationale of the method is not clear, but may be explained as the relief of an exhausted nervous system from toxic material in the stomach.

The Failure of Antitoxin in the Treatment of Diphtheria. Herman (*Med. Rec.,* May 27, 1899), writing under the above title, asserts that the quoted diphtheric statistics, which have been thought to indicate the value of the antitoxin treatment, are grossly misleading, and endeavors to prove the antitoxin not merely a useless, but a dangerous and at times a fatally harmful agent. He claims that diphtheria at the present time shares with other infectious diseases, as typhoid (against which no new remedy has been directed [*sic*]), a marked mortality decrease, as shown by the statistics of German cities before, and since 1895. Statistics from selected cities are then given to indicate the great increase of diphtheria mortality during "antitoxin times" (1895-98) as compared with pre-antitoxin times. Herman then "cuts off the last leg of the antitoxin

argument" by showing that the bacterial diagnosis has led to the statistical inclusion of many mild cases formerly omitted as tonsillitis, etc., but fails to mention that membranous croup (laryngeal diphtheria) was also omitted from diphtheria statistics previous to bacteriologic method of diagnosis. [The recent remarkable statistics showing the immunity of children injected with antitoxin in infected foundling asylums, etc., from diphtheria or secondary ill effects, are not given. It is to be regretted also that statistics showing the severity of the epidemic, the time of administration of the antitoxin, and the reliability of the latter are not furnished by the author.—Ed.]

DISEASES OF THE CHEST.

UNDER THE CHARGE OF

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Clinical Observations upon the Structural Changes of the Heart in Chlorosis. Gautier, of Moscow, reports (*Deutsches Archiv. für klin. Med.*, Band 62, Dec. 22, 1898) a series of very interesting and exhaustive observations upon the heart in chlorosis. Of 22 cases, in which there were no pathologic conditions, except the anemia that could have produced changes in the vessels or heart, in 20 patients the dimensions of the relative cardiac dullness were increased. In several of these the condition was very pronounced. The extent of the relative dullness can only be explained through a general increase in the size of the heart. In several cases in which doubt could have been cast upon this statement, the diagnosis was confirmed by the Roentgen rays. The clinical symptoms during the course of the disease and of the convalescence warrant the statement that the enlargement was due to a combined dilatation and hypertrophy of the heart muscle. In a number of the cases the increase in size of the heart disappeared after the subsidence of the symptoms of chlorosis, but more frequently the area of relative dullness remained enlarged for some little time after the blood had become normal. The causes of the dilatation and hypertrophy are probably those of the chlorosis itself, namely, that the general impairment of all the tissues of the body in this disease affects the heart muscles. The normal circulation of the blood is overwork for such a heart and dilatation and hypertrophy occur. Gautier calls attention to the fact that such a condition is a pure example of a

transitory cardiac hypertrophy. It is possible that a hypoplasia of the heart and vessels may play a part in the enlargement of the heart in a very few of these cases, but G. thinks that such a condition is rarer in chlorosis than is usually thought. Many cases of so-called idiopathic cardiac hypertrophy may be explained by the application of G.'s theory. In certain cases there is such a functional weakness of the myocardium of congenital origin, that in time it exhausts its reserve strength in attempting to answer the normal demands upon it. Consequently, hypertrophy takes place. Cases of enlargement of the heart in chlorosis have been previously reported by Ott, Thurn, and Rieder. A very thorough review of the literature of the subject accompanies the article.

On the Pulsus Paradoxus, with Special Reference to its Occasional Occurrence on One Side Only. Harris (*Lancet,* Apr. 22, 1899) reports a case of pulsus paradoxus of one side, with a diagnosis of indurated mediastino-pericarditis, dilated heart, bronchitis, ascites, and chronic peritonitis, with inspiratory swelling of the veins of the neck. The pulsus paradoxus was more marked in the arteries of the left than those of the right side. The patient was under observation for two years and four months, in which time, the pulse was small and easily compressible on both sides. On the left, however, it was very much more irregular than on the right, and this irregularity was rarely associated with respiratory act. When the patient took a deep breath, the pulse at the left radial artery became quite perceptible; whereas, the change, if any, on the right was very slight, and on some occasions no change whatever could be noticed when a deep breath was taken. When deep inspiration was taken, and the breath held at the end of that act, the pulse of the left radial artery gradually returned, the successive beats getting larger and larger until, after 25 seconds, the waves were as high as during ordinary breathing. Harris is inclined to the opinion that the production of the pulsus paradoxus on one side depends in some conditions upon the narrowing of the main arteries on that side, and that cardiac weakness is one of the essential factors in the production of pulsus paradoxus; hence when the heart is weak, in addition to unilateral narrowing of the vessels, the peculiar phenomenon is more easily produced. He agrees with Schreiber that a case of true pulsus paradoxus is one in which there is marked diminution in the volume of the pulse of all the arteries, occurring during regular inspiration, not requiring it to be a deep one, and in which the peculiar pulse intermission is accompanied by a regular action of the heart, while the heart itself shows no weakening in its action during the period while an inspiration is being made. If such a condition is associated with an inspiratory swelling of the cervical veins, it may be regarded as pathognomonic of indurated mediastino-pericarditis. The autopsy in the case showed an extensive mediastino-pericarditis with its common complication of chronic peritonitis. The adhesions involved the whole mediastinum, and extended far enough to involve both subclavians; but, as far as could be seen, the adhesions were equally numerous and of a similar nature and arrangement around all of the vessels springing from the arterio-aorta.

It is, however, probable that the adhesions were so arranged as to produce some narrowing of the arteries on the affected side upon inspiration. If this were not the case, the explanation is probably that the greater length and narrow lumen of the left subclavian artery would be more likely affected by these adhesions than the same artery on the right side. A number of pulse tracings accompany the article. [Compare the abstract of an article by Reineboth (INTERNATIONAL MEDICAL MAGAZINE, Oct., 1898, p. 700), in which a very similar case is reported. Attention is called to the fact that the weakening of the heart action is a very important element in the causation of pulsus paradoxus of one side.]

DISEASES OF THE DIGESTIVE SYSTEM.

UNDER THE CHARGE OF

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Final Report of Schlatter's Case of Removal of the Stomach. Schlatter (*Med. Rec.,* Mar. 18, 1899) reports the death of the woman from whom he removed the stomach on December 25, 1897. After gaining in weight and improving in health for over a year, she suddenly began to lose in weight, complained of pains in the side and back, and an examination revealed a hard, nodular tumor of the size of a child's head in the left hypochondrium. She became very cachectic and died on October 29th. A *post-mortem* examination revealed carcinomatous lymphatic metastases in the mesenteric, retroperitoneal, bronchial, and subclavicular glands, and studding of the pulmonary pleura with metastatic nodules. The microscopic examination showed a very peculiar condition of the mucous membrane at the site of the esophago-enterostomy; it was neither of the esophagus nor of the stomach. As no dilatation of the lower part of the esophagus occurred, the assumption during life that a pouch formed which compensated for the absent stomach was not correct, the explanation of the ability of the patient to take large quantities of food being that the liquid portions passed at once into the small intestine. The death in this case not being due directly or indirectly to the operation, the conclusions arrived at by the author during the life of the woman are generally correct.

Remarks upon Exploratory Operations upon the Stomach for Obscure and Obstinate Gastric Symptoms. Maylard (*Lancet,* Apr. 8, 1899) urges the advisability of an exploratory operation in all obscure cases which cannot be benefited by medical treatment. The

dangers of an aseptic operation are practically *nil,* while the benefits that may be derived are incalculable. "If," the author argues, "in a diseased area, accompanied frequently with grave complications, we can successfully operate upon the stomach, it is only reasonable to suppose that with all our modern precautions and complete equipments we may still more successfully operate upon a comparatively normal region or organ." In cases of cancer, an early operation may result in a cure, while delay until a tumor or any other patent sign of cancer appears proves fatal. Besides being of extreme diagnostic value, an exploratory operation has been found curative, even in purely functional disorders of the stomach. Thus, Dr. Bradford and Mr. F. Freres report each a case in which an exploratory operation performed for the relief of an obstinate and obscure affection of the stomach failed to reveal any pathologic condition and yet the patients got well. The author also reports a case of dilatation of the stomach of long standing, which could not be relieved by the usual medicinal treatment but was cured by an operation, although the dilatation in this case was not dependent on any organic lesion. It is also interesting to notice that in this case the operation was followed by a severe hemorrhage, resulting from the bleeding of some small vein. The patient lost 35 ounces of blood, and a second operation was performed to stop the bleeding. In spite of this, the recovery was uneventful, "showing," as the author remarks, "how much can be done upon the stomach without any ultimate ill result." [Intragastric electricity, properly applied, rarely fails to contract dilated stomachs in the absence of stenosis of the pylorus. It should always be tried before resorting to surgery.—B. R.]

Treatment of Constipation without Drugs. Illoway (*N. Y. Med. Rec.,* Apr. 8, 1899) commends the following measures as rational and curative: (1) Proper regulation of diet; (2) carefully administered massage; (3) electricity; (4) hydriatic applications aimed to overcome intestinal inertia. The use of cathartics is condemned, while mechanical measures only are considered to be curative.

On Massage of the Stomach and Large Intestine after the Introduction of Medicated Solutions. Wegele (*Zeits. f. diat, u physic., Ther.* II., Heft III.) recommends massage of the stomach for the direct treatment of the mucous membrane by medicated solutions. His method consists in introducing the desired medication into the stomach either by means of the tube or drinking. With the patient in the recumbent position, the abdomen is subjected to deep kneading; strokes being made from left to right, from above downward and *vice versa,* and cross friction. By these means the medicated solution is brought into intimate contact with every part of the mucous membrane. This treatment is taken before breakfast, and should not last longer than 5 minutes and in many instances be limited to 2 or 3 minutes. At the end of the sitting the medicated solution is expressed or washed out through the tube. Of the various drugs thus employed, the author recommends normal salt solution, or 1% ichthyol in chemic insufficiency of the stomach. In chronic

hyperacidity ½% of Carlsbad salt, or bismuth in suspension (10-12:200) are used. Hypersecretion is treated by ½% solution of nitrate of silver, followed by irrigation with salt solution. Decoctions of hops or quassia are useful in nervous anorexia. In dilatation of the stomach any of the antifermentatives may be used. When the motility of the stomach is good, massage preceded by a glass of Kissingen, Carlsbad, or Vichy water is quite sufficient. Massage, on the other hand, is contraindicated in active inflammations of the gastric mucous membrane, in ulcer, cancer, acute gastritis or perigastritis. In employing this method in the large intestine, the author uses the oil injections. The oil at body temperature is introduced into the colon and allowed to remain for 4 hours, when the abdomen is massaged. In constipation due to hysteric paresis of the intestine the author found it necessary to resort to the injection of 2 to 3 drops of croton oil in emulsion prior to the massage. In treating chronic diarrhea injections of tannin, ichthyol and other astringents are employed. The massage in this case should be very gentle and limited to soft strokes and friction. [It is questionable whether massage of the stomach in pronounced hyperchlorhydria would not aggravate the disease, even after introducing an alkalin solution. If the massage were active or deep, it certainly would tend to increase the secretion.—B. R.]

A Case of Operative Treatment of a Stomach Presenting the Shape of an Hour-Glass. Zejdler (*Bolnitshnaya Gaz. Botkina*, Vol. X., No. 1) reports a case of a woman, thirty-three years old, who suffered for five years from pain at the pit of the stomach, at times very severe; constipation and occasional vomiting one to two hours after meals, some emaciation of late. On palpation a tumor was felt in the epigastric region, to the left of the median line. It was of the size of a fist, reaching down to within a finger's-breadth of the umbilicus. Painful on pressure. On percussion, a dull sound was elicited, separated from the dullness of the spleen by a wide area. The stomach was dilated, the lower border reaching midway between the umbilicus and pubes. Examination of vomit showed the presence of HCl, and absence of lactic acid or any other abnormal condition, except yeast fungi. During her stay in the hospital, it was observed that the tumor occasionally diminished in size after vomiting. A diagnosis of perigastritis resulting from a gastric ulcer was made, and an operation performed. On opening the abdomen, the stomach was found dilated and adherent to the spleen and the abdominal walls to the left of the linea alba. At about the middle a cicatricial band divided the stomach into two equal compartments, communicating through an opening of the size of the pylorus. The greater curvature was at this point drawn up, forming what is called ventriculus bissacatus. Gastro anastomosis, after Wölfler's method, was performed, and the patient fully recovered, except some remaining dilatation. In discussing the symptoms of this affection, the author does not find them sufficiently characteristic or of constant occurrence to render the diagnosis easy. The most important sign is the division of the stomach into two sacs after inflation. Often a splashing sound is heard, while the tube fails to bring up any contents. A sudden flow of stomach contents after the water

during lavage is returning clear may also occur. Several times a swelling under the left ribs has been observed after a heavy meal, disappearing after vomiting. Pain in the left side, under the ribs, and vomiting, are constant symptoms. The majority of authors claim an absence of HCl, which was not the case in this patient.

NEUROLOGY.

UNDER THE CHARGE OF

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Méralgie Paresthésique (Névrite du Femoro-cutané). Paresthetic Meralgia (Neuritis of the Femoral Cutaneous). Claisse (*Gaz. des Hop.,* Dec. 20, 1898, No. 149) calls attention to a condition of disturbed cutaneous sensibility of the thigh, particularly the antero-external portion. He considers it important because of the danger of confounding it with grave nervous disorder. In three cases studied by him, the principal feature was an area of anesthesia and paresthesia in the upper portion of the thigh. This area was racquet shaped, with the handle upward, and was easily outlined from 10 to 30 cm. above the supero-external angle of the patella, with a breadth of 5 cm. Sensation to pain and temperature was retained but retarded. There were no trophic lesions and in two cases the knee-jerks were unaffected. The third patient also had paraplegia and atheromatous vessels; but there was no relation between these conditions and that under discussion. The regions involved in this affection are those portions of the thigh supplied by the middle cutaneous branch of the crural nerve (meralgia anterior) and by the external cutaneous nerve (meralgia antero-external). The latter is affected most frequently. The painful character of the affection may be slight or intense, patients sometimes complaining of lightning pains. The precise topography, the absence of motor or trophic symptoms render the diagnosis easy, but the possibility of an initial tabetic manifestation must be considered. Pathologically, the disease is probably a local neuritis with trauma and the action of heat or cold as excitants. The prognosis is usually good. [A case with microscopical examination of the affected nerve has recently been reported. Neuritis was found. The disease is also known under the name of "Bernhardt's disturbance of sensation in the thigh." The reported cases are becoming quite numerous, and recently, before the Philadelphia Neurological Society, Musser and Sailer were able to give the clinical histories of 8 cases. Two or three cases have also been observed within the past few months in the nervous clinic of the Polyclinic Hospital of Philadelphia.]

The Treatment of Tetanus by Means of Intracerebral Injections of Antitoxin. Rambaud (*N. Y. Med. Jour.,* Dec. 17, 1898) calls attention to the cases treated by this method abroad and in the United States since the report of the work of Roux and Borrel. In his résumé of 12 cases he notes 5 successful ones. Of the fatal cases, 3 died within 15 hours after the operation; that is to say, before the antitoxin had an effect; another died in a septicemic condition with renal disorder and profound anemia, a fifth had been treated by Quincke's method of lumbar puncture.

Intradural Spinal Tumor Opposite the Body of the Fourth Dorsal Vertebra; Complete Paralysis of the Parts below the Lesion; Operation; Recovery, with Ability to Walk without Assistance within Three Months. Eskridge (*Phil. Med. Jour.,* Dec. 10, 1898) reports a case in which he made a correct diagnosis of intradural spinal tumor on account of the existence of unilateral nerve-root symptoms for a year; the presence of nerve-root symptoms for six months before the appearance of cord-symptoms; the development of bilateral cord-symptoms two weeks after the parents and the boy first noticed any trouble that indicated a lesion in the cord; and the absence, when he (Eskridge) first saw the patient, before absolute paralysis had set in, of the usual symptoms of a unilateral cord-lesion, such as motor paralysis on one side of the body and anesthesia on the opposite, and this notwithstanding the fact that unilateral nerve-root symptoms had been present for a year. The location of the tumor was determined by the highest level of the loss of sensation. The spinal column was opened in the upper thoracic region by Dr. Freeman, and a bean-shaped tumor was found within the dura, beneath the third vertebral arch, on the right side of the cord. The patient made a complete recovery after the operation, and when last seen was apparently perfectly well. This case is very carefully reported and is worthy of study.

The Manifold Uses of the Hairpin in Surgery. The hairpin, besides being used for cosmetic purposes, can be made to replace many a costly surgical instrument by the simple ingenuity of the physician. According to Eberson, it is useful to fasten bandages and other dressing. When given the proper care, it can be used for the extraction of foreign bodies from the nose, ear and other cavities. It will also serve the purpose of a dull curette for removing exuberant granulations, etc. When straightened, it makes a very good probe and applicator, and can even replace the costly Bowman's probes with that distinct advantage that a separate set can be used in each case of gonorrheal affections of the lachrymal passage. In these, as in all similar cases, the hairpin should be perfectly smooth and properly sterilized. In cases of emergency a hairpin can be used as retractor in tracheotomy and similar operations. A bleeding vessel can also be tied by it. A new and elastic hairpin will make a very good retractor for the eyelids. Finally, when heated, it will make a very serviceable cautery.

MEDICAL DISEASES OF THE KIDNEYS.

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Movable Kidney and its Treatment. R. R. Smith (*The Physician and Surgeon,* Feb., 1899) says that the terms "floating" and "movable" kidney are usually synonymous, although, strictly speaking, "floating kidney" should be reserved for the anomaly in which the kidney is movable and is attached to the abdominal walls by a so-called mesonephus. The condition is rare, and it is only with acquired movable kidney that we have to deal. Two cases of floating kidney were reported by Bruce and Clarke. Pregnancy is commonly assigned as a cause, but we find it in women who have not borne children, and even in men. Women who are thin are more apt to have the condition. The symptoms vary in different cases: some have none and others have a great many which are not always due to the floating kidney. Pelvic trouble generally coexists with floating kidney. The symptoms are divided into three groups: (1) Pain; (2) derangement of digestion; (3) disturbances of the nervous system. Pain is commonly due to twisting of the ureter, and is paroxysmal, very severe, and passes away suddenly or gradually. To distinguish between floating kidney and renal colic is sometimes very difficult. Edebohls calls attention to catarrhal appendicitis associated with movable kidney. Most patients with this disease are neurasthenic. The diagnosis is easy, and generally made without difficulty. The treatment of some of the cases is palliative. Operation is considered the method par excellence. [Movable kidney is usually one symptom of a general prolapse of the abdominal contents. It may often be cured by massage, gymnastics and proper hygiene, including appropriate diet and dress.—B. R.]

Some of the Clinical Aspects of Granular Kidney. West (*The Lancet,* Feb. 11, 1899) states that this is very important on account of its frequency. It is often discovered *post mortem* when not suspected, and thus explains why death has occurred in other diseases that are not generally fatal. The percentage of granular kidney at *post mortem* is from 13.2 to 18%. Out of 79 cases admitted into St. Bartholomew's Hospital, 38.4% died of granular kidney as the sole cause. It is a bilateral and to a great extent symmetrical affection. Extreme contraction is very rare. The opinion is that the kidney is greatly reduced in size, but this is not always the case. The kidneys are not generally granular on the surface, although microscopically the interstitial change may be marked enough.

A typical granular kidney is small, contracted, hard, cirrhotic or granular, and has a nodular surface, often studded with numerous cysts. On section the kidney is found to be cirrhotic and wasted, but the wasting affects chiefly the cortical region, and consists in fibroid induration and cellular degeneration. Granular kidneys are sometimes described as of two kinds, the white and the red, and are further called the contracted white and red. The author does not approve of the classification, and thinks that the term, white cirrhotic and red cirrhotic would be much better, as he considers the difference to be one of color chiefly. Microscopically, the distinction between the two forms is open to question, and clinically he can see no distinction at all. Granular kidney is often described as chronic interstitial nephritis, but all forms of this disease are not necessarily granular kidney. The author excludes unilateral lesions of the kidney, patchy fibrosis, the results of infarcts or gummata, bilateral lesions of both kidneys, certain forms of chronic interstitial nephritis, which are often included pathologically, but clinically are distinct. Granular kidney is divided into two forms—arterio-sclerotic and renal—and they are dealt with in different places, one under the diseases of the vessels, the other under diseases of the kidney. The pathologic possibility that acute parenchymatous nephritis might end in granular kidney seems to be very rare. In all his experience the writer has never seen any instances in which the lesions have gone so far as to produce a somewhat diminished white kidney, the majority of such kidneys being still much above normal size.

It is possible that the condition would be more frequent if the patient lived long enough. It does not necessarily follow, even when the symptoms of clinical parenchymatous nephritis last for a number of years, that we have contracted kidney. The changes in the arteries are generally widespread, in fact universal throughout the whole body. Two forms of general arterial change are recognized in pathology—atheroma and that connected with granular kidneys. In advanced age the two conditions, atheroma and granular kidney, may be associated, but this is very rare in the young. The relation between the cardio-vascular and the renal lesions is very difficult to determine. The cardio-vascular lesions, being of the nature of hypertrophy, are, as in other cases, the response of the heart to some extra continued work thrown on it, and are therefore secondary. If the change in the peripheral vessels be structural and the lesions in them of a degenerative character, they would involve the kidneys as well as other parts; and in this way it is conceivable that the kidney disease might be a subordinate part of the general vascular disease. This theory is indicated by the term "arterio-sclerotic kidney." If the changes be not of a structural character, but a functional one, any structural change that is found, being of a secondary and subsequent order, the obstruction must depend upon some impurity in the blood. This impurity may be either of a renal or extra-renal origin. Thus we are brought back again to the two original views about which so much discussion has raged, viz., whether the disease is primarily arterial or primarily renal. Granular kidney is a disease that presents no symptoms, and is insidious in character. The only definite symptom in the early stage is frequent

micturition, especially at night. When symptoms are present the disease is far advanced. The symptoms as stated above are cardiac and renal. The cardio-vascular are earlier than the renal, and the former includes heart failure and consists chiefly of hemorrhage and its results. The renal symptoms fall into two groups, namely, chronic and acute uremia. The author prefers the term acute and chronic toxemia. He also prefers renal cachexia for chronic uremia. In the early stage of granular kidney the diagnosis must be made by the physical signs, not the symptoms. The thickening of the arteries is one of the cardinal signs of the disease, and is never absent in advanced cases. The low arterial tension, or rather the fall in tension, in the later stages of granular kidney, is of great clinical importance. Another important symptom is the eye changes met with in granular kidney. When with other symptoms there is found albuminuric retinitis, or early changes which lead to it, the diagnosis may be justly made of granular kidney. The author thinks that where high pulse tension and thickened arteries are found in the young, granular kidney is more than likely.

DERMATOLOGY.

UNDER THE CHARGE OF

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Acute Circumscribed Edema Associated with Hemoglobinuria.

Wende (*Jour. of Cut. and Gen.-Urin. Dis.*, Apr., 1899) reports the case of a man, aged 64, who suddenly developed upon the dorsum of his right hand a tumefaction of irregular outline and measuring 7 by 4 inches. The swelling was of the color of the skin, except at its summit, where dilated veins imparted to it a bluish tinge. It did not pit upon pressure, but was elastic, even to the extent of giving the impression of fluctuation. There were no subjective symptoms, other than numbness and stiffness. The swelling diminished in size at the end of 24 hours, but did not entirely disappear for 10 days. Later, a walnut sized swelling occurred upon the forearm and a smaller one upon the face. The urine was very dark, and appeared to the naked eye to contain blood. The microscope failed to reveal the presence of blood corpuscles, but tested with the spectroscope, absorption bands of oxy-hemoglobin were demonstrated. A second test made 24 hours later showed material diminution of the hemoglobin. On the day following the attack the blood appeared to exhibit a diminution in its hemoglobin, and a decrease in its specific gravity. The red corpuscles num-

bered only 3,520,000, whilst 4 days later they had increased to 4,450,000. But 2 cases of acute circumscribed edema with hemoglobinuria are recorded. The author is inclined to agree with previous observers in attributing the affection to exposure to cold when overheated.

Cervico-facial Actinomycosis. Legueu and Salmon (*Annales de Dermatol. et de Syphilog.*, Mar., 1899) presented to the Société Francaise de Dermatologie et de Syphilographie a report of a case of actinomycosis occurring upon the face and neck of a 40-year-old woman. The affection began in May, 1898, when the patient was seized with severe headache, particularly upon the left side, which was aggravated by movements of mastication. Pains were also experienced in the jaw, in the orbit and upper portion of the neck. At this time there was no exterior sign of anything abnormal. Seven months later, the neck became stiff and painful and subsequently totally immobile. There then developed behind the left ear a tumefaction of considerable size. The mouth could no longer be opened as a result of a contracture of the jaws. The left side exhibited considerable exophthalmos. Behind and below the left mastoid apophysis a firm, hard swelling, with vague and undefined edges, developed. The skin was violaceous and stretched. At one point there was a depression with evident softening. At the same time a chicken-egg sized swelling developed in the right carotid region. Here the skin was soft and of normal coloration. Despite this, the patient's health was not bad. The patient had no fever, but her color was not good. Toward the end of January, the upper and lower eyelids of the left side became the seat of a hard tumefaction which spread slowly and imparted to the overlying skin a reddish color. The patient experienced severe pain. The swelling of the lower eyelid subsequently opened, giving exit to a reddish serous liquid containing characteristic yellowish granules. The same character of fluid had previously been evacuated from the other growths by incision. The patient was placed upon 2 grams of iodid of potash per day, and this was gradually increased to 8 grams. The patient improved to the extent of moving the head and opening the jaws. The pain was also considerably ameliorated. Histologic examination of the granules showed the presence of the fungus of the disease. The authors considered the prognosis in this case very grave.

Erysipeloid (Erythema Serpens). Anderson (*Brit. Jour. of Dermatol.*, Mar., 1898) reported to the Dermatological Society of London a case of erysipeloid occurring as a marginate erythema upon the hands of a woman. He stated that the affection had been long familiar at St. Thomas' Hospital among those engaged in the provision trade. T. Colcott Fox in his remarks said: "Rosenbach, in April, 1887, described an erysipelas-like affection frequently met with in cooks and kitchen workers, butchers, and those who handle game, fish, shell-fish, etc. It manifests itself chiefly about the fingers and hands, as a slowly progressing, sharply defined, slightly elevated, dark, violaceous, almost livid red zone, which develops around the site of inoculation, occupied by sensations of burning, itching and pricking. The area of redness extends peripherally, as the central

affection dies away without desquamation. A spontaneous cure results in 1, 2 or 3 weeks. Rosenbach declared the affection to be due to a micro-organism, supposed to be a cladothrix, which exists in dead and decomposing animal matter. He found a coccus associated with erysipeloid, somewhat larger than the staphylococcus, but on cultivation a closely-woven mass of fine threads of various lengths was formed. The inoculation of pure cultures produced a typical erysipeloid, the symptoms usually developing in forty-eight hours. The only requisite for inoculation is a small wound." The same affection was described by Morrant Baker in 1873, under the name of erythema serpeus.

General Pigmentation. Galloway (*Brit. Jour. of Dermatol.,* Jan., 1899) presented at the Dermatological Society of London a case of general pigmentation of the body. At a previous meeting he had shown the case and had looked upon it as due to the prolonged administration of arsenic. This diagnosis had been supported by the peculiar tint of the pigmentation, and the fact that small points of darker pigment were scattered over the body. There was keratosis of the palms, and it had been proven by prescriptions and records that the patient had taken arsenic at intervals for years. It was also noted that the liver was enlarged. The liver increased markedly in size, the patient lost flesh and strength, and was removed to a hospital as a consequence of an attack of hematemesis with melena. The pigmentation had increased greatly, so that she was of a sepia-brown tint. The character of the enlargement of the liver was not quite determined, but the evidence was against malignant disease. Probably it was due to cirrhosis. There was no acanthosis, nor pigmentation of the mucous membranes; nor had there been more than very slight icterus. The case was brought forward as of interest in connection with the formation of pigment, probably true melanin, in cases of disease of certain of the abdominal viscera.

PEDIATRICS.

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Paresis of the Extremities in Scarlet Fever. Meyer (*Presse Med.,* p. 119, 1898), quoted in the *Monthly Cyclopaedia,* calls attention to a sign very constant in scarlet fever but not encountered in other eruptive diseases; this consists of a paresis of the extremities, the patient complaining that he cannot move the hands or feet. This is comparatively rare;

more often there is merely a numbness of the hands, with sensations of tingling or formication; numbness may be absent and only a pricking sensation localized in the extremities of the fingers or palms may be experienced. This sign appears during the period of eruption, occasionally earlier; its duration is variable.

Forms of Infantile Colitis. L. Guinon (*Gaz. Heb. de Med. et de Chir.,* No. 25, 1898) calls attention to a most important fact, which clinicians, in their zeal for recording new and accurate grounds for differentiation, are liable to overlook. He declares that the infantile gastro-intestinal tract presents a single entity. The stomach is also always more or less involved in intestinal disorders. He prefers the differentiation between symptomatic forms of colitis and entero-colitis as being more exact than enteritis follicularis catarrhalis. Chronic forms, he divides into the indolent, the enteralgic or the simple. A variety presenting dysenteric phenomena occurs only after 4 years of age, which is often due to chronic constipation a result of intestinal atony.

Pyocyaneus Infection in Childhood. Manicatide (*Jar. für Kinderheilk,* B. XLV., H.1) reports 2 cases; one, a boy infant 14 months old, suffering from a chronic gastro-intestinal disorder, had practically recovered, when suddenly he was taken with severe symptoms of broncho-pneumonia and died. At autopsy the skin was noted to be of a peculiar yellowish green color, and the mucous membrane of the larynx and trachea exhibited an abundant muco-purulent secretion. A careful examination of this secretion exhibited the presence of the bacterium coli, streptococcus, staphylococcus, and the bacillus pyocyaneus; in the lungs the pyocyaneus was again found, along with the pneumococcus; in the spleen in pure culture the pyocyaneus was again found; in the liver, the pyocyaneus was associated with the bacterium coli; and a pure culture of the blood from the heart and kidneys showed also the pyocyaneus. The second case was a boy of 4 years, who was recovering from diphtheria and had been treated with antitoxin. He suddenly died from febrile process and in nearly all the organs were found the bacillus pyocyaneus.

A Cycling Incident. An Australian champion cyclist fell forward in his saddle twenty-five yards before the end of a carnival race, and, with his feet still moving with the pedals, reached the winning-post, when it was discovered he was dead. The story appears to be well authenticated, and if so it records another striking instance of the indomitable pluck of athletic men. It shows, moreover, the unerring balance and precision needed in a race, and the instinct that caused the rider, even in the act of dying, to throw himself into and maintain a proper poise. This is the only instance, probably, ever recorded of a race being won by a dead man, and it is said the doctors stated he died during the last lap. Medical cyclists will naturally look forward with interest to learning further details of this most tragic affair.—*Med. Press and Circular.*

THERAPEUTICS.

UNDER THE CHARGE OF
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Ice or Cold as a Local Application. Ewart (*Lancet,* Apr. 8, 1899) calls attention to ice massage in painful cases of rheumatoid and allied forms of arthritis, and on the local application of cold in some other affections, by either Arnott's method [(rubbing the inflamed surface with ice from time to time) (1851-64),] or Esmarch's [(continuous application of ice bags) (1860)]. The first case mentioned was one of rheumatoid arthritis of the hip; salicylates, morphia, etc., were administered internally, and hot-air baths given. These seemed only to aggravate the condition, while hot applications gave only temporary relief. Finally, ice massage was tried. A piece of ice was gently rubbed over the inflamed area until numb. The coldness of the surface thus produced usually lasted about three-quarters of an hour, and was followed by a gentle glow of warmth, which was not objectionable. After several applications, the pain in the parts entirely left, and did not return. The second case was a woman, suffering from the same disease; delirious, systolic murmur at the apex, urine albuminous, etc. The usual constitutional rheumatic treatment was given, in conjunction with local warmth, and this failing to produce any amelioration, the ice treatment was tried. Immediately the woman became rational, fever subsided, as did all the acute local symptoms, although the joints were much thickened and stiffened. The third case was a woman suffering from pemphigus with acute and painful joint affection, hands, knees and ankles being involved. Ice locally gave permanent relief to these symptoms. The author mentions the use of salt, ice and methyl chlorid in sciatica, neuralgia, neuritis and lumbago by other writers who have reported cases with good results.

A Case of Tetanus Treated with Antitoxin, etc. Arneill (*Med. News,* Apr. 22, 1899) reports a case of tetanus in a colored boy, 16 years, caused by a wound in the foot from a rusty nail. It healed promptly, but 8 days later symptoms began to show and 2 days later were well developed; subcutaneous injections of antitoxin, 10 c.c. every 4 hours in conjunction with chloral, bromid, etc., until 90 c.c. had been given. He died 4 days after his first convulsion.

A Case of Herpes after Large Dose of Arsenic with Some Remarks on the Etiology. O'Donavan (*Jour. of Cut. and Gen.-Urin. Dis.,* Mar., 1899) reports a case where a girl of 16 years, Irish descent, not well developed, nor strong, neurotic type, was given Fowler's solution as a

tonic, and, not being careful in dropping the medicine, had taken much larger doses than ordered (*gtt. x*). In about a week the eyelids became so puffed she could hardly see. The arsenic was stopped. Five days after there appeared patches of herpes over the left shoulder, breast and arm, extending down to the fingers, outlining the skin supplied by the radial and median nerves, while over the breast it was that supplied by the anterior thoracic. The arm and shoulder were cauterized with the thermocautery, and then dressed with vaselin; this gave great relief. Two days later, she complained of some pain that seemed to radiate from a few vesicles. These were lightly cauterized, and afterwards all pain disappeared, while those elsewhere dried promptly, except around the breast, which still continued to give great pain. Internal treatment consisted of laxatives, and morphia and chloral, which was not required after the first two nights. Five months afterwards the pigmented spots had faded away, although slight scars from the cautery could still be distinguished. The author does not believe that herpes zoster is a disease due to bacteria, as he cannot account for its being limited, and so well confined to certain nerve areas. His belief is that some degenerative change takes place in the terminal nerve filaments, and not in the nerve ganglia, as in his case. The part in which the pain was relieved was where the cautery had been most freely applied, and if it had been central, he thought the pain in the breast should have been relieved by the application to the arm; whereas, the relief from pain was only where the herpetic vesicles had been destroyed.

Paraldehyde in Asthma. Macgregor (*Lancet,* Feb. 11, 1899) has used this drug in cases where morphia and chloral failed to give relief; he accredited Dr. Mackie, of Elgin, to be the first to recommend it. Paraldehyde is a drug that can be given with less apprehension to this class of patients than those usually prescribed. He mentions 11 cases in which he used this drug with equally good results. The obtaining of sleep alone is of the utmost importance in this class of cases, and from the fact that paraldehyde is eliminated, to a great extent, by the lungs through the breath, it would seem as if it acted directly upon the lung tissue. The slowing of the respiration is also a distinct advantage. The dose prescribed was usually 3ss, given if possible after the patient had been put to bed; to disguise its objectionable taste cinnamon water and orange peel may be used as a menstruum.

Formalin in the Treatment and Removal of Inoperable Malignant Growths. Mitchell (*Br. Med. Jour.,* Feb. 11, 1899), while trying to control a hemorrhage from a recurrent sarcomatous mass, about the size of a man's fist, on the face, found that formalin was not only a good styptic, but was also valuable in so hardening the growth that it could easily be cut away, a small portion at one time, without the loss of any blood; he applied a 20 % solution, on cotton, protecting the normal tissue with guttapercha and leaving it in contact with the mass for 24 hours. The hardened portion was then cut off and the dressing reapplied. Formalin injected hypodermically did not seem to give such good results as when applied to the surface. If the pain is severe or the edema of surrounding parts very marked, the application should be withheld.

PATHOLOGY AND BACTERIOLOGY.

UNDER THE CHARGE OF

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Cancer. Under the title "The Parasite of Cancer," Russell (*Scot. Med. and Surg. Jour.*, May, 1899), and Park, "A Further Study into the Frequency and Nature of Cancer" (*Med. News*, Apr. 1, 1899), contribute two valuable papers bearing upon the causes of cancer, its method of propagation, distribution, etc. Park calls attention to the rapid and extraordinary spread of cancer. Thus, in England and Wales the death rate from cancer in proportion to the population has increased nearly five times, and in New York State, in 1887, 2,363 deaths were from cancer and 11,609 from consumption; in 1898, 4,456 deaths from cancer and 12,552 from consumption. It is the only disease showing a steady increase. At the present rate, in 1909 there will be more deaths in New York State from cancer than from consumption, small-pox, and typhoid fever combined. Park goes on to give reasons for believing in the parasitic origin of cancer, citing numerous results and giving statistics in support of his belief. He cites cases in which the evidence points to contagion, and others in which direct inoculation appears to be responsible, mentioning the case of Emson, who died of cancer 8 months after an injury received during operation upon a cancerous patient. Similar cases are cited. Russell's paper is a scholarly review of the experimental and other research work which has been done to demonstrate the parasitic origin of cancer. He reviews in detail his own work and the work of Sanfelice; the histologic research of Roncali, Busse, Kahane, and others, closing with a comprehensive bibliography. He gives the following conclusions of Sanfelice: "(1) That all authors who contend that Russell's fuchsin bodies are not blastomycetes have not hitherto brought forward experimental proof that they are cellular degenerations. (2) That through the inoculation of cats with pure cultures of saccharomyces neoformans, the typical bodies are produced which have been described by Russell and others, as occurring in malignant tumors in man, and in certain chronic inflammatory processes. (3) That these fuchsin bodies are not found in normal cats, but only appear in these animals when they are inoculated with pure cultures, as saccharomyces neoformans, or with pieces from the tissues of cats containing the typical forms of Russell's bodies." Russell's own conclusions in the matter may be summarized as follows: Blastomycetes resemble in a striking manner bodies found in cancer. The results of inoculation by blastomycetes strikingly resemble malignant growths, even to metastases. Sporozoa may cause malignant growth, but cultivation experi-

ments are necessary to establish this, and at present they are not successful. All existing evidence is in favor of blastomycetes.

A New Sign of Death by Submersion. Moreau (*La Presse Med.,* Apr. 2, 1899) calls attention to two points which he insists are indicative of death by submersion: (1) The presence of a clear and limpid liquid in the peritoneal cavity; (2) the presence in the bladder of a large quantity of clear urine but slightly colored. These signs are not invariably present. If death has taken place by inhibition of reflexes at the moment the victim fell into the water, the signs may be absent. Again, if the urinary bladder be full at the time of submersion, the addition of clear colorless urine may not take place.

Pseudo-tuberculosis. This important subject was discussed before the London Pathological Society March 7th (*Lancet,* Mar. 11, 1899). McFadyean agreed with previous speakers on the unscientific character of the term "pseudo-tuberculosis."[1] He admitted the existence of lesions macroscopically and microscopically, not to be differentiated from the true tubercle; by reason of the difficulty in demonstrating the bacillus, and also on account of the existence of other bacilli which closely resemble the tubercle bacilli, cases occur in which it is impossible to say definitely that the process is tuberculosis. He thinks, however, that the experienced observer will, in time, nearly always be able to give a definite opinion. He showed the following specimens as illustrating lesions closely resembling tuberculosis: (1) Small pin-head, shotty nodules in the lung of the sheep associated with an undetermined worm in the center of each nodule surrounded by leucocytes, and these by giant cells and, like tubercles, showing softening in the center. (2) Gray patches containing embryo worms and ova, in the lung of sheep. (3) So-called scrofula of sheep. (4) "Bacterial necrosis" in the liver due to the "necrosis bacillus." (5) Mycelium nodule in the lung of a horse. Fullerton agreed as to the possibility of lesions macroscopically and microscopically resembling tubercles, and demonstrated specimens of general infection in guinea-pigs by cultures of pathogenic yeasts. Pakes referred to aspergillosis as one of the forms of pseudo-tuberculosis. Lazarus-Barlow mentioned a form of tuberculosis in diabetics in some cases in which the tubercle bacillus could not be demonstrated. The Society appointed a committee consisting of the president, Dr. Payne, Drs. McFadyean, Woodhead, Shattock, and Fullerton, to devise a nomenclature of the forms of granulomata which have been included under the term "pseudo-tuberculosis."

Note on the Flagella of Micrococcus Melitensis and Bacillus Pestis. Gordon (*Lancet,* Mar. 11, 1899) takes issue with the observers who state that micrococcus melitensis is a non-motile organism. He con-

[1] It occurs to the writer that, while the use of new words may be very undesirable, it might, under certain circumstances, be well to refer to these diseases as "tuberculoid" processes. The word tuberculoid is authorized. (See Gould's Dictionary.)

siders it motile and has been successful in demonstrating by the method of Pitfield and by Van Ermengen's method, the presence of flagella. As a rule a single flagellum is seen at either end. In very rare instances as many as three flagella may be counted.

A Case of Gastroschisis. Lockwood and Addison (*Quarterly Med. Jour.*, Apr., 1899) report a case of gastroschisis (exomphalos). During a tedious labor there suddenly occurred what was presumed to be rupture of the membranes, followed by the entire fetal intestines together with the liver, right kidney, and supra-renal capsule. At first it was believed to be rupture of the vagina, the mother's intestines presenting. Later examination showed that it was the child's viscera. Delivery was completed after removing the extruding viscera. The following is abstracted from the description of the specimens: The opening was in the umbilical region, ovoid in shape, 4 by 3 cm. The epidermis ended sharply at the margin of the ring, the peritoneum bulged forward to the umbilical cord and formed the walls of the sac in which the viscera had been confined. The umbilical arteries and vein passed along the lower edge of the sac. The extruded viscera were attached by a stalk consisting of the esophagus and some diaphramatic muscular fibers to the crura of the diaphragm and posterior abdominal wall. The diaphragm was complete. The liver was unattached at the diaphragm. The viscera, delivered before the body, were the liver, stomach, and the whole of the intestinal canal down to the rectum, right kidney and adrenal, pancreas, the left adrenal, and spleen. The fetus and viscera are depicted.

CLIMATOLOGY AND HYGIENE.

UNDER THE CHARGE OF

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The Water Supply of Paris. The growth of Paris has compelled the authorities to search for a more abundant supply of water, and the necessity of providing against the possibility of a water-famine during the coming international exhibition is forcing itself upon their attention. The daily consumption of water is 121,000,000 gallons, or 28½ gallons per head of the present population. It is estimated that the population of the city

will have increased in 1930 to three and one-third millions. Only 55,000,000 gallons of the daily supply are available for domestic use, and this would be sufficient were it not for the excessive waste. A portion of the water comes to the city through three conduits, respectively 64, 108 and 82 miles in length. Several projects are proposed to increase the supply: (1) To bring the water from Lake Geneva, 310 miles distant, at a cost of $125,000,000. This was rejected as impracticable. Another plan, involving the construction of an immense storage reservoir, has been abandoned, and it is now considered preferable to increase the supply by conducting the water of certain springs at the sources of the Loing and Lunain. It is also intended to filter the river water through beds of sand. In brief, the plan is as follows: The aqueducts from the Loing and Lunain are to be finished in two years. Filtering beds are to be made, increasing the quantity of filtered water per day from 11,000,000 to 14,300,000 gallons. A reserve of river water equal to 28,600,000 gallons per day is to be provided. Plans are to be further prepared for bringing a fresh supply of 35,200,000 gallons of spring water per day to Paris, and works are to be constructed for its distribution.—(*Boston Med. and Surg. Jour.,* March 30, 1899.)

On Some of the Latest Advancements in Disinfection with Formalin. Wysokovitz (*Vratch,* Vol. XX., No. 10) communicated to the Medical Society of Kieff some of the experiments on formalin disinfection performed in the laboratory of Flügge. The method employed is very simple, not requiring any special lamps or other appliances. The room which is to be disinfected is tightly closed, all the openings and cracks being plugged with cotton immersed in corrosive sublimate solution, $^1/_{1000}$. The furniture is removed to the centre of the room; the bedding and clothing spread out so as to make everything easily accessible to the vapor. The formalin is then put into evaporating dishes or other suitable utensils placed on tripods, and slowly evaporated by means of alcohol lamps. Each 100 cubic meters of space require 800 c.c. of ordinary formalin, to which 3,200 c.c. of water is added, and the whole evaporated to 1,000 c.c. The time required is 7 hours, but can be shortened to 3½ by increasing the amount of formalin to 1,500 c.c.

The addition of water enhances the disinfecting power of the formalin. To neutralize the vapor after the disinfection is over, Flügge employs ammonia in the following manner: Outside the door is placed a hermetically closed vessel with a small pipe for the attachment of a piece of rubber tubing, the other end of which passes through the keyhole, or any other suitable opening, into the room. The vessel is filled with 800 c.c. of ammonia (25%) for each 100 cm. of space, and the latter is evaporated for 20 minutes, when the heat is removed and the ammonia allowed to evaporate for 30 minutes more. The doors and windows are then opened, to allow the exit of the excess of ammonia. The entire procedure takes from 5½ to 9 hours, and the cost of the material is about $1. Experiments proved that this method is quite efficient in cases of scarlet fever, diphtheria, tuberculosis, measles and influenza.

SURGERY.

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The Surgical Treatment of Neuralgias. Daudois (*Bull. de l'Acad. Roy. de Méd. de Belgique,* Tome XII., No. 10), after dealing with the anatomico-pathologic relations of the nerves that are the most common seat of neuralgia, says: "The seat of the neuralgia is almost always the ganglion from which the nerve originates; radical treatment and relief can only be secured by removing it. If sections and resections produce results, it is because they produce a reaction in the ganglion. This reaction is generally temporary, the ganglion and the fibers of the nerve that remain recovering, the pathological condition formerly present returning, and a second operation being necessary for a radical cure. Since the reaction is independent of the amount of traumatism, simple resections are better than excisions, as the peripheral portion of the nerve remains and ulterior interventions are easier. For the same reason, it is not essential to operate upon the trunk of the nerve, the reaction and effect on the pain can be produced by acting on the peripheral terminations. The action may even be on another nerve trunk that originates from the same ganglion. This possibility makes the removal of the ganglion unnecessary; it is a delicate and dangerous operation in many cases. A series of operations on peripheral fibers of various nerves arising from the same ganglion will produce repeated reactions and relief, rendering the removal of the ganglion itself unnecessary."

Perforating Gastric Ulcers. Furner (*The Lancet,* Dec. 31, 1898) reports three very noteworthy cases of gastric ulcer, in which operation was performed for the closure of the perforation. Two of the three cases recovered completely, although serious complications were present in all. The first patient died with a persisting gastric fistula, worn out with hectic and unable to retain food or regain strength. The second patient did well for a time, but the recovery was complicated by the formation of a pleural effusion, the patient recovering after its removal. The third case is of special interest, as it exemplifies a new method of treating severe recurrent hemorrhage from gastric ulcers. Hemorrhage after operation, excluding other causes, may proceed from the ulcer which perforated and has been closed from injury during the operation to a previously healthy portion of the stomach, or from a second ulcer coexistent. Statistics tell us that about 3% of cases of gastric ulcer die from hemorrhage and that

about 6½% of all cases perforate. The occurrence of 2 ulcers opposite to each other on the anterior and posterior surfaces of the stomach was found in 13% of cases, the former being the site of the perforation, while the latter was in most instances firmly adherent to the pancreas. In the more recent cases where operation has been resorted to, out of 18 cases operated upon, 3 had ulcers on the posterior wall as well, with their bases formed by the pancreas; 2 others had an ulcer on the posterior wall only through the mucous membrane, and in one case a perforation occurred in an ulcer on the posterior surface after the anterior one had been sewn up. In this list of all the cases operated upon ⅓ of the number had double ulcers. But whether a second ulcer is present or not, if grave symptoms such as perforation or hemorrhage arise, the necessity for treatment is urgent whatever be the cause. A second perforation can be treated by operation. There is, however, sometimes difficulty in deciding positively that a perforation has taken place; cases are reported in which the symptoms indicated perforation, but none was found. Hemorrhage has been treated by operation, but the successes have not been numerous. In the author's third case treatment by drugs and nutrient enemata had been of no avail; they could no longer be retained. The author in his case performed a temporary enterostomy. The operation is comparatively slight, and can be borne by a weak patient. The bowel was opened a meter below its commencement and a tube inserted, through which peptonized foods were introduced. The intestine should be attached to the parietes to prevent the forming of a spur that will preclude the passage of food when feeding commences by the mouth. The case reported by the author recovered after all other known methods had failed to keep up the strength till the hemorrhage ceased.

The Employment of Hypnotic State to Produce Analgesia. Dr. Paul Joire (*Bull. Soc. Cent. de Med.*, Oct., 1898) discusses under this head the subject of hypnotism and its value in pregnancy. Braid, one of the first workers in this field, himself suggested the use of the hypnotic state for the performance of surgical operations painlessly. Esdile, a contemporary of Braid, performed the first operation painlessly in 1845. This was before the day of anesthesia by ether or chloroform. Says Bérillon: "Though the principles of hypnotism are apparently simple, we ought no more think of improvising a physician hypnotizer than of improvising a physician oculist." He would have it a specialty. Among cases where good results are produced, none are more satisfactory than cases of labor. The age, the sex, the nervous state of the patient are all points in favor of an easy production of the hypnotic condition. Even before labor, it is of advantage in the treatment of the following symptoms—nausea, vomiting, perverted appetite, neuralgias. The two forms of hypnosis employed are somnambulism and lethargy. Lethargy is a profound state of somnambulism. Somnambulism is often of more value than lethargy, as patients in it are susceptible to suggestion. Employed in labor, it causes the pain of the uterine contractions to disappear without interfering with the efficiency.

LARYNGOLOGY AND RHINOLOGY.

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A Case of True Aprosexia without Complicating Impairment of Hearing (Un cas d'aprosexie pure sans complication du cote de l'acuite auditive). Guye (*Ann. des. mal. du Larynx, etc.,* Feb., 1899) proposed nasal aprosexia in 1887 as a term to designate cerebral inactivity, an inability to fix the attention on a given subject, due to nasal lesion. He explained the condition by the interference in the circulation of the cerebral lymph by the lymphatics of the nasal mucosa. Others, among them Titeff, have offered another solution: "Nasal aprosexia, which had better be called auditory, is due without doubt to a lessening of auditory acuteness, the direct consequence of the impairment of the sense of hearing." The nasal causes (stenosis, adenoid vegetations) are, moreover, the factors of the ear troubles. This coincidence does not prove that aprosexia is auditory. The author reports a case of a boy of eight years with aprosexia, in whom hearing is normally acute. His mentality had developed rapidly, his memory improved after removal of adenoid vegetations and intranasal treatment. There is an independence from an etiologic standpoint of aprosexia and deafness, as can be seen in children somewhat deaf, who do not suffer at all from aprosexia.—(*Rev. Hebdom. de Laryngol., etc.,* Vol. XX., No. 15, De la Combe.)

The Connection between Hypistaphyly and Leptoprosopy (Ueber die Beziehungen der Hypsistaphylie zur Leptoprosopie). Grossheintz (*Thèse de Bale,* 1898), having discussed the different theories whose object is to explain the formation of hypistaphyly (high arched palate), especially criticises that which makes hypistaphyly depend on defective nasal respiration. Assuming the opinion of Siebenmann, that a palate with high arch is found narrow in certain classes of skulls, the author examined a number, using the palatimeter of Siebenmann. Discarding the procedure of the Craniometric Commission of Frankfort, Grossheintz measured the width of the palate in the frontal plane between the second premolars. The result of his measurements follow: (1) To a palate narrow and high (hypistaphyly) corresponds a generally narrow formation of the upper half of the face (leptoprosopy). (2) Narrow nasal fosse (leptorhiny) and narrow orbits correspond to a variety of skull with high domed palate. (3) Hypistaphyly depends, in general, on cranial peculiarities in certain races and not upon the action of nasal stenosis produced after birth.—(Abstracted by Jankelevitch in *Rev. Hebdom. de Laryngol., etc.,* Vol. XX., No. 13.) [That cranial peculiarity is heredi-

tary cannot be gainsaid. The narrow, slit-like nasal orifices are sometimes seen in every member of a family. Nevertheless, with nasal obstruction, due to whatever cause, there is a certain amount of cranial moulding done after birth. By its efforts to open the nasal orifices the child draws down the facial muscles in a sort of sniffling, thus narrowing the arch and crowding the teeth, a process aided by the open mouth and dependent jaw, not to mention lack of development in the suprapalatal structures whose growth tends to flatten the arch.—Ed.]

Chronic Postnasal Catarrh Hawley (*Laryngoscope,* April, 1899), after mentioning the etiology and symptoms of this affection, reviews the treatment, special stress being laid on the fact that in the majority of instances medicaments fail to reach the nasopharynx in *spray* form. The spray is wasted in the nose or pharynx, "becoming a stream which flows along the inferior meatus until it either falls into the pharynx or by the aid of the soft palate passes into the adjacent nostril." Spraying back of the soft palate is limited by the gagging induced by the procedure. He describes an instrument that can be inserted through the nostril, no matter how small, until it reaches the postnasal space, where the full force of the spray can be employed, directly and forcibly. The strength and amount used can be regulated by a set screw at the head of the apparatus.

OPHTHALMOLOGY.

UNDER THE CHARGE OF
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Dacryocystitis in Infants. Valude. (*Gaz. des Hop.,* Mar. 23, 1899) says that dacryocystitis of infants is not solely dependent upon prolongation of the fetal occlusion of the nasal duct, but may have the same causes as in adults. The medical treatment consists in instillations of feeble collyria of zinc sulphate and silver nitrate, together with repeated evacuations of the lacrimal sac by pressure at the internal canthus. If the case resists this treatment, it is likely due to congenital imperforation of the nasal duct, and he then passes a number one Bowman sound, without slitting the canaliculus. If the trouble still persists, he slits the canaliculus and passes a number two, and exceptionally a number three, Bowman sound. Often general anesthesia is necessary. The treatment is augmented by repeated antiseptic irrigations by means of the suel syringe.

Synovitis Associated with Interstitial Keratitis. J. W. Stokes (*Scot. Med. Jour.,* Apr., 1899) recalls attention to a peculiar form of synovitis, often associated with intestitial keratitis. As long ago as 1860, Hutchinson mentions a case. In 1886 Clutton published 11 cases of bilateral synovitis of the knee in cases of keratitis. Ten years before, how-

ever, Förster had drawn attention to the close clinical connection between congenital syphilis and this form of synovitis, as well as demonstrating the non-rheumatic nature of the latter. The disease of the joints is characterized by the following points: The knees are the joints almost always affected, and it is invariably bilateral, though both knees may not be found to be affected simultaneously, as the effusion often occurs in one before the other at a variable interval. A passive effusion of fluid takes place into the joint, which becomes considerably enlarged, but the distension is never so great as to make it tense, nor is there any hyperemia of the neighboring skin; the joint retains free mobility, and is painless. The affection is very chronic, lasting from three to twelve months. No thickening of the synovial membrane itself occurs, nor is there any disease of the neighboring bones, and it is not to be confounded with epiphysitis or with gummatous infiltration of the joint. The disease of the eye is the well-known interstitial keratitis, which is likewise bilateral and very chronic, and consists of a ground-glass opacity, commencing in the deep layers of the true cornea at its margin, and travelling inward toward the centre, the whole cornea becoming more or less opaque, and finally clearing up again from its margin. In severe cases iritis and choriditis are nearly always present, the disease, strictly speaking, being one of the uveal tract to which the deep layers of the cornea belong. Of this disease Hutchinson at one time said that the existence of it alone justified the diagnosis of congenital syphilis; this, however, has been shown not to be strictly correct, the statistics of a number of observations giving 60 to 70 % as syphilitic in their origin, the causation of the remainder being put down to malnutrition, anemia and other debilitating affections. In 30 consecutive cases of interstitial keratitis observed by Stokes, 3 showed the above form of synovitis, in two case in both knees, and in one in the left knee. The patients were females, aged 11, 17, and 23 years. The natural inference is that the two affections are manifestations of the same disease, *i.e.*, congenital syphilis; although the keratitis is not always syphilitic in origin, and C. Thompson has published notes of a case in which the patient had both affections limited to the same side of the body, and in which not the slightest taint of syphilis could be demonstrated either in the patient or in members of her family.

The Microscopic Diagnosis of Trachoma. Snydacker (*Medicine*, Apr., 1899) states that the classification of trachoma has hitherto been so loose and uncertain as to render definite lines uncertain. Any form of follicular inflammation of the conjunctiva which resisted treatment and persisted for any length of time has been regarded as a form of this disease. Suyder claims the etiologic factor of trachoma is constant, and its recognition only assures us of an accurate, certain and scientific diagnosis. In this view, he is not supported as yet, although his previous paper is receiving marked attention. According to Snydacker, trachoma is due to a capsulated diplococcus, 1½ to 2 μ in length and 5 μ in breadth, which is not decolorized by the Gram method of staining, and whose septum at times has an affinity for anilin stain, causing the diplococcus to simulate a bacillus. This organism is constantly present in the trachoma follicle and

secretions, before astringent and antiseptic remedies have been employed. It is easily differentiated from all other germs, as none other answers to its description. The method employed in suspected cases of trachoma is briefly as follows: When enlarged follicles are found, one of these is expressed and its contents employed. If there are no follicles, the secretions can be examined, though these are very unsatisfactory. The expressed follicular contents are spread thinly and evenly over four cover-glasses; two of these are fixed ten minutes in absolute alcohol, two are fixed in a flame. One of each kind is now put through the ordinary Gram method of staining. The other two are stained according to the Gram-Weigert method, lithium carmine being employed as the counter-stain. In this way four slides are prepared by slightly different methods, whose results should coincide. Where lithium carmine is employed as a counter-stain the bacteria are shown as a deep violet on a bright carmine background. As the bacteria are very minute, and at times scarce, it may be necessary to search a number of fields. Owing to the affinity of the septum between the diplococci for anilin stains, some of them simulate baccilli. Around a few of them the gelatinous capsule may be seen faintly. The heavily stained elliptical bodies are cells, repeatedly observed within the trachoma nodule, which resemble myelocytes.

GENITO-URINARY SURGERY AND VENEREAL DISEASES.

UNDER THE CHARGE OF

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The Importance of Sulphur Springs in the Treatment of Syphilis. Bondarenko (*Russki Med. Viest.,* Vol. I., No. 6) has endeavored to solve the moot point about the value of sulphur baths as a specific. According to his observations, an adult taking a sulphur bath of 120 liters for 30 minutes will absorb through the skin about 336 c.c. of sulphuretted hydrogen, provided the water contained 7.5 mg. of the latter to the liter. Any quantity of H_2S above that will have no effect on the absorptive power of the skin; in other words, no more will be absorbed if the water contains as high as 33 mg. to the liter. Such a quantity, the author believes, is quite sufficient for therapeutic purposes. The sulphuretted hydrogen acts on syphilitics as an excitant. In cases where the syphilitic virus is latent, and

not accompanied by the usual manifestation, a sulphur bath will awaken the dormant poison to activity, and the picture of acute syphilitic infection will be produced. The further action of the baths is curative. The virus, no more able to withstand the action of the sulphuretted hydrogen, gradually dies out; the increased metabolism brought about favoring the resorption of the affected tissue and the elimination of the poisonous material. The author therefore recommends the use of the baths as the only initial treatment of syphilis. This will often clear up a diagnosis of syphilis by first aggravating the affection. To test the efficacy of the baths as a curative method, he has treated 81 inmates of a special sanitarium by this method alone. The patients received for the first week daily baths, and were taking the sulphur water internally in amounts varying from 300 to 1,200 c.c. daily. These observations led to the following conclusions: In some cases the sulphur baths are useful to bring out latent infection. Slight forms of syphilides can be cured by this method alone. When used in connection with the mixed treatment, it enhances the effect of the latter. It favors rapid elimination of mercury from the organism. It also favors absorption of old syphilides. The continuous (for 20 to 30 days) internal use of the water, in amounts of 300 c.c. daily, will increase the appetite nutrition and body-weight. Larger doses (1,000-1,200 c.c.) will diminish the appetite and body-weight. For therapeutic purposes the dose need not be larger than 300-500 c.c. A. R.

Diagnosis and Treatment of Rupture of Bladder. Thorndike (*Jour. Cut. and Gen.-Urin. Dis.*, May, 1899) reports 4 cases of extra-peritoneal rupture of bladder, with 1 death and 2 fatal cases of intra-peritoneal vesical rupture. The injection of a measured quantity of liquid, through a soft catheter, into the empty bladder, followed by the measurement of the return fluid, he considers the most reliable diagnostic sign of intra-peritoneal rupture. He summarizes as follows: "Immediate operation should be performed in all cases where a rupture is known to exist. In all intra-peritoneal cases immediate laparotomy should be performed and the wound in the bladder sewed up. In all cases where there is any doubt as to whether the rupture is extra- or intra-peritoneal, immediate laparotomy should be performed. In all extra-peritoneal cases where there is any doubt as to the direction and extent of the extravasation, laparotomy should be performed at once for exploration and diagnosis, and should be followed by the operation appropriate for the drainage of the case."

A Simple Method of Determining the Presence of Bromids in the Urine. Jolles has devised the following method: Dimethyl phenylen-diamin test paper is prepared by immersing filter paper in 0.1% sol. of the indicator; 10 c.c. of urine are acidified by sulphuric acid and permanganate of potash added until a permanent red color is produced. The mixture is then warmed over a water bath, and a wet piece of the test paper held over the vapor. If the least trace of bromine is present the test paper will turn red-violet.

GYNECOLOGY.

UNDER THE CHARGE OF

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The Present Position of the Question of Operation in Uterine Fibroids. Bishop, of Manchester, Eng. (*Lancet,* Jan. 28, 1899), says the majority of the profession believe, first, that fibroids are not fatal if left alone; second, fibroids can be made to shrink by the use of ergot and similar drugs; third, fibroids naturally tend to disappear at the menopause; fourth, surgical interference, if it is to be effective, imports extreme risk to life. The relative value of the first three depends largely upon the amount of force which attaches to the fourth. The latter was certainly true in the preaseptic days, so much so that it was only in the rarest cases that a serious operation was instituted. To obviate its necessity, Tait advocated removal of the ovaries, which in 262 cases he did, with 4 deaths. This mortality was low enough to justify the procedure, providing it accomplished the purpose, but it was found that some cases continued to bleed after the total removal of ovarian and tubal tissue. According to Johnson, in at least 10% it failed to accomplish relief. This was particularly true in the class of fibro-cystic tumors. It was further objected that the removal of organs which, like other ductless glands, exerted an influence essential to the general equilibrium, produced unpleasant phenomena without being certain to secure the desired result. Myomectomy, or the removal of the fibroids *per se,* was next advocated. In this operation great difficulty was experienced in closure of the uterine wound. The uterine tissue is extremely difficult to suture satisfactorily. It contracts and dilates. A suture which at one time is firm, at another may be loosened. The operation was attended with difficulty where a number of fibroids occupy the wall, though Alexander, of Liverpool, advocated the removal of multiple fibroids through the single opening. It is not always certain that such growths would not return in a uterus which was predisposed to fibroid degeneration. Engstrom reported in 1896, 100 cases with 5 deaths. In 37 cases there were multiple tumors (from 2 to 5). In one case there were 22 tumors. In 3 patients there was return, or fresh growths developed. Martin reported 113 cases with but 3 relapses. The next procedure was the removal of the uterus, leaving the ovaries and tubes behind if healthy. This followed the same course as in ovariotomy. The uterus was delivered through the abdominal opening, its base encircled by a wire serre-noeud, and the main bulk of the tumor cut away, leaving the neck of the uterus as a pedicle secured by the clamp. The pedicle became adherent to the

abdominal wall. There was a prolonged and dangerous period of separation of the stump which afterwards dragged upon the pelvic and abdominal tissues, also danger of inclusion of some portion of the bladder, or the ureters in the serre-noeud. Secondary hemorrhage occasionally occurred, and the operation was not applicable to tumors in the broad ligament. Efforts were naturally made to accomplish the intraperitoneal treatment of the stump. Schroeder was the original advocate. Occasionally intraperitoneal hemorrhage with fatal result or suppuration and formation of pus which had to be evacuated discouraged the procedure. Byford removed the supra-cervical portion of the uterus, made an opening in Douglas' pouch and dragged the stump through into the vagina. The lining of the uterine cavity was destroyed in many ways, by strong carbolic acid, the actual cautery or electro cautery. Pan-hysterectomy found its advocates by two routes—the abdominal and vaginal. A combination of both is sometimes practiced. Kelly reports 100 cases with 2 deaths; Bantock 7 cases with 1 death; Christopher Martin 10 cases, 1 death; Doyen 35 cases with a single death. The operation has been modified by different men, the ultimate intention in all being to entirely remove the affected uterus, leaving tubes and ovaries unless irremediably diseased. Advantages of the operation are the total removal of the fibroid uterus, relief from the exhausting hemorrhage, sense of weight and discomfort, pressure upon the bladder, and rectum, pressure upon the sacral and lumbar nerves, obstruction to the free circulation of the lower extremities, and nothing is left behind to act as a fresh nidus for growth or suppuration, while the all important ovarian tissue may be undisturbed. The cardinal objection is that all possibility of pregnancy is removed. This applies to all operations for the supravaginal removal of the uterus, but is not a valid objection, for the reason that but few of these cases become pregnant. Of those who do so, the great majority suffer from obstruction or difficulty during the progress of the labor. The mortality of the mothers in such complication is 53% and the child 66%, so that one-half the mothers and two-thirds of the children die. The danger in pregnancy can be readily understood. Abortion is frequent, and the fibroid uterus contracts with difficulty and imperfectly. There is great danger of clot or portions of decidua with consequent septic poisoning. Should the pregnancy reach the normal period, the dangers of parturition are great. A tumor in the broad ligament is an insurmountable obstacle to the passage of the child. Caesarean section may be required. Sometimes the tumor can be passed with the forceps, but then it is so bruised that it may become gangrenous. The placenta may be inserted over the region of the fibroid and furious hemorrhage occur during and after its separation. Owing to the inability of the part to contract, the comparison of the mortality in these cases with that of pan-hysterectomy is very greatly in favor of the latter. The danger to the patient, the decreased mortality over the operation and the discomfort and distress which the patient must experience, who is the victim of such a condition, with constant, profuse bleeding, with danger of secondary changes, such as fatty degeneration of the heart muscle, gangrene or sloughing of the tumor, torsion, its malignant alteration, compression of the

neighboring organs, all emphasize the importance of operation. As the danger of operation is increased with the increase in size of the tumor, the patient should be advised to have the tumor removed at an early date.

OBSTETRICS.

UNDER THE CHARGE OF

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The Treatment of Eclampsia by Infusion of Salt Solution. Allen (*Amer. Jour. of Obstet.*, May, 1899) reports three cases treated by this method with recovery. All were seen after convulsions had set in. Accouchment forcé, bleeding, and salt solution injected under the mammae repeatedly, coupled with the other usual remedies, except veratrum viride, constituted the treatment. The author thinks that the poison is probably of placental origin and is kept diluted and eliminated by the above measures with better results than otherwise.

A Convenient Technique for the Delivery of the Aftercoming Head where Gross Disproportion Exists. Stahl (*Am. Jour. of Obstet.*, Apr., 1899) reports an emergency case of hydrocephalus, breech presentation. With no instruments at hand but a pair of scissors, he decapitated, turned the head, punctured and evacuated through the vertex and delivered manually. The patient made an uneventful recovery. The various methods advocated are compared, and he presents the great advantages and ease of this procedure as compared to the others. The time of operation was 15 minutes.

New Method of Inducing Premature Labor. Spinelli (*Arch. Ital. di Gin.*, Dec., 1898) claims that his method can be performed by the general practitioner; no especial instruments are necessary, and it starts labor in two or three hours with no danger. The patient being prepared for operation, the posterior lip of the cervix is seized and the cervix dilated with a dilator (if necessary) to admit one finger. The finger is crooked and carried up until the membranes are detached from posterior surface. A yard of gauze saturated in 10% ammonium ichthyolate and glycerin is then passed up on the finger and digitally pushed up higher and higher, care being taken not to rupture the membranes. Nearly the whole of the gauze can be introduced. The vagina should be plugged with sterile gauze and the patient put to bed. Pains begin very soon after the introduction of the gauze, and labor comes on rapidly.

Local Treatment of Intrauterine Sepsis. Groves (*Can. Pract.*, March, 1899) reports four cases treated by injecting uterine cavity with tincture ferri perchloridi after removing fragments with finger nail and irrigating. No curette is used. The treatment should be repeated if necessary every 30 hours. The iron is antiseptic, it seals up all absorbents and stimulates the uterus to contract.

The Influence of Menstruation on Lactation. Burdix's (*Wien. Medizin. Blatt,* No. 42, 1898) observations were made upon 140 cases. A large number of analyses were made before, during, and after menstruation to determine the amount of sugar, albumin, ash, fat, etc., in the milk. His results are that 60% of women menstruate during the lactation period. The occurrence of menstruation is rarely a cause for removing the child from the breast. Quantitative changes in the milk were rare. The only qualitative change was in the amount of fat. In a very small proportion of cases was there any effect upon the infant. He concludes that the child should never be taken from the breast for the sole reason of menstruation, and that there is no truth in the statement that the child who nurses from a menstruating mother will become rachitic.

Tetanus Following Criminal Abortion. Dawson (*Louisville Med. Mo.,* Dec., 1898) reports following: Patient 28 years old, 3 para. Midwife induced abortion at five months by introducing a catheter into uterus and leaving it. The patient did well until the fourth day, when stiffness of the jaw and neck occurred. Temperature, 102½°; uterus tender, with a muco-purulent and very offensive discharge. The rigidity rapidly extended to the trunk and extremities and the patient died on the sixth day, after numerous convulsions, in spite of all treatment.

Dystocia from Contraction of Bandl's Ring. Bué (*L'Obstetrique,* Jan., 1899) states that this condition was formerly thought to be a contraction of the internal os. A Porro operation is sometimes necessary when all other means fail, the author having seen two such cases; both were neglected shoulder presentations. Version is frequently impossible when this condition exists. A case is described in which the hand was protruding from the vagina, and a hand passed into the uterus found Bandl's ring strongly contracted around the arm, although the remainder of the uterus was relaxed. After great difficulty the hand was introduced and finally a foot was brought down, but the child could not be turned on account of the firm contraction of the ring around both the arm and the leg. Further dilatation of the ring and pushing the arm upward finally overcame the difficulty. The cause of the dystocia is easily diagnosed by the touch.

Salt Solution in Sepsis after Abortion. Ostermayer (*Cent'bl. für Gynaekol.,* No. 12, 1899). The patient was nearly in extremis with a sub-normal temperature, and a fatal termination seemed certain. On account of the favorable reports of Eberhart, the writer was induced to try

this remedy. Normal salt solution was injected twice daily in the loose connective tissues and was persisted in for a number of days with a noticeable improvement, and eventually saved the case.

Orexine in the Vomiting of Pregnancy. Hermann (*Therap. Monat.*, Jan., 1899), in 9 cases of severe vomiting of pregnancy, was successful in each on administering four grains of orexine three times daily.

Albuminuria During Pregnancy without Convulsion in the Mother; Eclampsia Present in the Child. Kreuzmann (*Der Frauenarzt*, Mar. 3, 1899) reports that the child was healthy at birth but 36 hours afterwards convulsions appeared suddenly. The mother had albuminuria and edema during her pregnancy but no eclampsia. Kreuzmann advances the idea that the child received the toxic element from the colostrum during the elimination following the labor.

The 55th Annual Meeting of the American Medico-Psychological Associat'n occurred in the Waldorf-Astoria, New York, May 23, 24, 25 and 26, 1899. The officers of the Association are: President, Henry M. Hurd, M.D.; Secretary and Treasurer, C. B. Burr, M.D. The program included addresses of welcome by Bishop Potter and E. G. Janeway, M.D., and papers by various physicians, including Sanger Brown, J. B. Chapin, Frederick Peterson, William Mabon, W. L. Babcock, G. Alder Blumer, Ira Van Gieson, and others.

The Value of Dust. E. W. McGann (N. J. Section of *Climate and Crop Service of the Weather Bureau* for April, 1899) says: "The majority of persons do not know that the sky is blue on account of the thousands and thousands of millions of atoms of dust floating in the atmosphere. Were it not for dust we would lack light on mother earth, and the heavens would be an inky black. Suppose a room absolutely dark, save a hole through one of the shutters. A ray of light will dart through the small opening, and one can observe tiny particles of dust dancing in that bright beam of light. As a matter of fact it is not the light we see, but simply a reflection, caused by these motes of dust. As it is with this shaft of light in the darkened room, so it is on a large scale throughout the air. The many millions of particles of dust catch the light, reflecting it back and forth from one to another, so making the atmosphere luminous. It is for this reason that, were it not for the dust, the sky would appear black, as it does at night when there is no moon. The sun would appear as an immense glowing ball. The moon and stars would be visible throughout the day. Everything would appear different. Where the light touched, the eyes would be dazzled by the brilliancy. The mellow softness of the shadows would become an intense black, and the outline of objects harsh and angular."

INTERNATIONAL MEDICAL MAGAZINE.

A Monthly Journal of Medical and Surgical Science.

JUNE, 1899.

Edited by BOARDMAN REED, M.D.

PUBLISHED MONTHLY BY E. B. TREAT & CO., 241–243 WEST 23D STREET, NEW YORK.

The Shortcomings of Medicine.

To make medicine an exact science like mathematics, we should need to know much more than is now possible. (1) We should need to know the exact pathologic condition, idiosyncrasies and tendencies, hereditary and acquired, not only of every patient in a general way, but of every organ in every patient. (2) It would be necessary to understand, far more accurately than any one now does, the effects of the various articles of food and drink upon the different organs of the body, both in health and disease, and this not only generally, but for each patient individually; for it is to a great extent true that what is one man's meat is another man's poison; and if these were all determined, there would remain the difficult practical problem of having the prescribed food properly prepared and eaten as directed. (3) It would be indispensable to know the effects not merely upon certain animals in health of all the drugs used by us, but also their effects upon every organ of the body of man, both in health and disease. Nay, more, it would be necessary to know all the idiosyncrasies and eccentricities of the particular patient under treatment in his reaction to the drugs used. Then the behavior of a case is often immensely influenced by the climatic conditions, the modes of dress, occupation, and social environment, and the effects of none of these have yet been exhaustively studied.

To come down to concrete instances, occurring every day in practice: How often does the physician who prescribes an alkalin drug or mineral water, know whether it is going into a stomach which, by reason of its excessive secretion of hydrochloric acid, requires such a remedy, or into one which, as a result of either chronic gastric catarrh or constitutional debility and depressing emotions, is lacking in the normal acid secretion, even though excessive fermentation has produced sour eructations with the customary long train of antitoxic symptoms? How often, when we give a routine prescription for constipation, do we stop to consider whether any of its ingredients will react favorably or unfavorably upon existing disease in the heart, stomach, liver, kidneys or rectum?

While it will manifestly be impossible ever to attain absolute perfection and exactness in our results, we ought to approach more and more nearly to this ideal goal, just as the parabolic curve approaches always a

straight line without ever becoming one. We can improve very much upon the results now usually accomplished by making more and more thorough examinations and more and more exact diagnoses, as well as by taking care not to prescribe a combination of active drugs, many of whose powers are little understood, when one or two simple remedies would effect the desired result.

Hypnotic Suggestion in Medicine.

In England and America much less use is made of hypnotism in the treatment of nervous disease, vicious habits, etc., than on the continent of Europe. The reason for this is not entirely clear. It is certainly not for lack of nervous disease or of vicious habits, though in the latter respect we in the United States can make a far better showing than most of the older nations.

There is unquestionably among us a superabundance of misery-producing affections which are most difficult of cure—often quite intractable—under the customary methods of treatment, and yet, according to the evidence of some eminent neurologists experienced in the therapeutic application of that uncanny art, quite amenable to treatment by hypnotic suggestion.

Perhaps it is just the uncanny flavor about hypnotism which makes most American physicians hesitate to meddle with it. The public in this country has come to regard it with mingled feelings of curiosity, suspicion and fear; and in most communities a physician known to possess, in an exceptional degree, what the public look upon as the mysterious and possibly mischievous power of inducing the hypnotic state, would run even more than the usual risk of defamatory accusations and attempts at blackmail. Indeed, Prof. Dercum, in his interesting lecture upon this subject, which appeared in the May number of the INTERNATIONAL, very wisely advised that no physician should ever practice hypnotism except in the presence of at least one witness of the same sex as the patient. Dercum does not think this method of treatment has much practical value, though admitting its occasional efficacy, and in this conservative view he is probably in accord with the majority of American neurologists, though the preponderance of opinion among nerve specialists in France and Austria, at least, would seem to be in favor of its employment in certain stubborn so-called functional nervous affections, in aberrations of the sexual instinct and in the drug habits.

The fact that neurologists are at variance with regard to the usefulness of hypnotism was strikingly exemplified by a discussion upon the subject which took place recently in the Philadelphia County Medical Society. Prof. John Madison Taylor read a paper in which he strongly advocated it, while Mills, Dercum and other distinguished specialists criticised his position, maintaining that hypnotism may be hurtful to the patient, while equally good effects can often be obtained by suggestions impressed forcibly and earnestly in the waking state. There are admittedly, however, con-

ditions in which the most positive and oft-repeated suggestions fail of effect under ordinary conditions and yet succeed perfectly under hypnosis.

Taylor emphasized this fact clearly in his paper. On this point he said:

"Why, then, is a person influenced more powerfully under hypnotism than in the normal state of attention? It is to be hoped this question shall be answered by psychologists in such fashion that the physician can comprehend and use it. My own impression is that whereas in the every-day state of a person who seeks medical advice and who avowedly listens to our counsel, many factors enter into and impair the attitude of attention and acquiescence they vouchsafe both as to degree and kind. The human ear is presumably devised as an avenue of information and conviction to the brain and consciousness; but too often it seems only to fulfil the purpose of listening for a pause in the flow of admonition, so that the tongue of the petitioner may secure an opportunity to give itself voice for reply. The normal state of consciousness is complicated by many disturbing factors, some normal, such as are caused by many varying phases in the life of relation; some abnormal, such as outgrow from vicious mental habits (which invariably exist in all prolonged instances of ill-health); some are due to the inherent faults of our symmetrical powers and development in the higher intellectual planes. If this foggy atmosphere can be removed, allowing of a direct relationship, rapport, between the subject and suggester, a more perfect impress can be made upon the receptive faculties, the latent powers of thought, action, or control can be awakened, strengthened, or guided."

There is a large amount of testimony from very eminent authorities abroad, which fully corroberates Dr. Taylor's claim that insomnia can often be overcome by hypnotic suggestion more readily and less harmfully than by drugs; and that chronic addiction to alcohol, opium, cocain, etc., can sometimes be cured in this way when other means have signally failed. Evidently, there is some real value in the method, and, liable as it is to abuse in unworthy hands, we are inclined to believe that it affords one more useful, even if two-edged, weapon against many obstinate affections. Really helpful and reliable remedies in the conditions above mentioned are all too few, and those usually depended on often most disappointing. Let us not, then, too hastily condemn and discard any new ones which have been proved capable in skillful hands of restoring even a few afflicted human beings to health. Hypnotic suggestion seems to be worthy of further trial, notwithstanding that its employment may be inconvenient and even difficult, and involve possibilities of embarrassment to the physician himself.

Serum-Therapy.

It is the province of liberal and progressive medical journals to publish communications from reputable physicians representing all phases of opinion on questions of interest to the profession. It is in this impartial spirit that we make room in the present number of the INTERNATIONAL for the article of Dr. W. Thornton Parker on "The Use of Normal Non-Immunized Serums." The subject of serum-therapy in its various bearings is one of great interest and im-

portance, and one which may be considered as having only just begun to be studied. It is a field which invites further patient research, and the work so far done in it scarcely yet warrants an attempt to draw many final conclusions.

It would seem to have been established, however, that the serum of healthy blood, both in man and animals, possesses a distinct antiseptic action, and even a bactericidal power with regard to numerous forms of micro-organisms. The full extent and limitations of this action, as well as all the conditions surrounding it, are by no means yet understood. On the other hand, ample evidence has been obtained from both the laboratory and the bedside to prove that under the stimulus of the toxins of certain diseases, such as that of diphtheria, tetanus, etc., when injected into the horse or ass, there is produced in its blood a something which increases markedly both the immunizing and antidotal power of the serum of the animals thus treated against the diseases in question. In view of the extraordinary decrease of the mortality from diphtheria under the antitoxin method of treatment, in all the great cities of the world where it has been faithfully carried out, it is now almost universally conceded that the method is valuable, and full of promise for the future.

EDITORIAL MENTION.

Dr. William J. Morton, of New York, contributed to a recent number of the *Medical Record* a notable paper on the treatment of brachial and sciatic neuritis by electro-static currents. Eighty cases of these diseases are reported, thirty-seven of them with more or less fullness of detail, and the remainder in a tabular statement. All the cases were relieved of their pains and steadily improved while under treatment. Fifty-seven of them were known to have been definitely cured and the remainder were believed to have recovered, though positive information on this point was lacking at the time of making up the report. The average duration of treatment was twenty-two days for the cases of axillary and brachial neuritis and thirty-two days for the sciatic form. The maximum duration of treatment was forty-two and seventy-eight days respectively in the two forms of the disease. Among the cases fully detailed were many of several months' standing, and some in which the patient had been suffering for four or five years in spite of active treatment by able physicians. Dr. Morton, in accomplishing his remarkable results, gave no medicine at all or any other form of treatment except that by means of static electricity, which he has found to be appropriate and curative at all stages of this usually very stubborn affection.

The Etiology of Carcinoma. Probably the most striking contribution to the recent "Cancer Number" (April, 1899) of the *Practitioner,* was that by Plimmer, upon the etiology and histology of cancer. In 1,130 out of 1,278 specimens of carcinoma, bodies supposed to be parasites belonging to the saccharomycetes were found. These bodies, which were found in greatest number in very actively growing tumors, were successfully cultivated on artificial media, and when injected into the peritoneal cavities of guinea pigs at times produced small endothelial growths which contained the parasites. Similar results have been reported by Sanfelice, Bra and others, but true carcinomatous growths have as yet not been produced. We hope to refer more fully to this interesting subject in a later number.

A gratifying indication of the progress which the broad principles of medical science are making is found in the fact that fifteen homeopathic physicians, after a course of study at the Cleveland College of Physicians and Surgeons, took diplomas from that institution at its commencement on May 3d. The recent marvelous advances in medicine have left no room or even plausible excuse for sectarianism; and it is most encouraging that so many of our homeopathic brethren have the clearness of vision as well as the honesty to recognize the fact.

The International's innovation of attempting to give systematic instruction in the more important specialties by means of short, simple and practical lectures or talks to general practitioners, has proved eminently successful. The feature is a taking one and, as we learn from not a few readers, makes the journal indispensable to many ambitious physicians who are unable to get away for the purpose of studying the newer things at post-graduate schools. It is much more convenient, as well as vastly less expensive, to receive such instruction in monthly installments at home, while the practice goes on as usual. The only wonder is that no medical journal ever tried the plan before.

The American Electro-Therapeutic Association. The ninth annual meeting of the American Electro-Therapeutic Association will be held in Washington, D. C., on September 19, 20, and 21, 1899, under the presidency of Dr. F. B. Bishop, of Washington.

The Fourth International Congress for Dermatology and Syphilography. This congress will take place in Paris, August 9, 1900, in Hospital St. Louis. The thirteenth International Medical Congress, under the presidency of Prof. Lannelougue, will also take place at the same time in Paris, and the section of Dermatology and Syphilography of the latter will combine with the Dermatologic Congress.

BOOK-REVIEWS.

A Review of Recent Legal Decisions Affecting Physicians, Dentists, Druggists and the Public Health. Together with a Brief for the Prosecution of Unlicensed Practitioners of Medicine, Dentistry or Pharmacy, with a Paper upon Manslaughter, Christian Science and the Law, and Other Matters. By W. A. Purrington, of the New York Bar. New York, E. B. Treat & Co., 241-243 West 23d Street. Price, 50 cents. 1899.

The worst thing about this valuable little manual is its long and involved title, quoted above in full. However, we should be prepared to forgive much in this respect to the always verbose legal profession. Physicians are often in doubt regarding their legal rights, duties and privileges as professional men, and sometimes find themselves involuntary offenders through a want of knowledge. Naturally, the average physician cannot afford to retain counsel by the year, as corporations do, and yet needs some way of keeping himself informed concerning the laws affecting his profession. Mr. Purrington's summary of decisions admirably fills this want. Every medical practitioner should have it at hand.

On the Origin and Progress of Renal Surgery. With Special Reference to Stone in the Kidney and Ureter, and to the Surgical Treatment of Calculous Anuria. Being the Hunterian Lectures for 1898. Together with a Critical Examination of Subparietal Injuries of the Ureter. By Henry Morris, M.A., M.B. Lond., F.R.C.S. Philadelphia, P. Blakiston's Son & Co. 1898. 8vo, pp. 288.

This work, though dealing with only certain phases of renal disease as viewed from the surgical standpoint, nevertheless epitomizes the progress in renal surgery in such clear-cut, concise and convincing language that no practitioner can afford to be without it. To the surgeon, it speaks with an authority that can only be based upon such a rich and varied experience as its author possesses. To the general practitioner, it shows how difficult the field is with which it deals, how valuable early diagnosis and intervention are in certain cases to his patient, and helps him to recognize and differentiate between the conditions that can be treated on general principles and those that need the early judgment of the trained diagnostician. A general diffusion of the knowledge it contains will certainly, if acted upon, lower the mortality from renal disease.

The Principles of Bacteriology: A Practical Manual for Students and Physicians. By A. C. Abbott, M.D., Professor of Hygiene, etc., University of Pennsylvania. Fifth edition, enlarged and thoroughly revised, with 109 illustrations. Philadelphia and New York, Lea Brothers & Co. 1899.

This excellent hand-book is meeting with well-deserved popularity and success. The fifth edition has been brought well up to date, so that its teachings are in full accord with the latest observations. The most noteworthy modifications and additions are in the chapters on technique, disinfection, and that on infection and immunity. The last is exceptionally full and satisfactory, considering the scope of the work.

Ocular Therapeutics for Physicians and Students. By F. W. Max Ohlemann, M.D. Translated and edited by Charles A. Oliver, A.M., M.D. Philadelphia, P. Blakiston's Son & Co., 1012 Walnut Street. Price, cloth, $1.75. 1899.

As in the recent work of Landolt and Gyrax the aim of this book is to treat exclusively of the remedial agents used in ophthalmology. In the former work the affections, drugs, and other remedial agents are dealt with very briefly in alphabetic order. In Ohlemann's work, the arrangement is more systematic and thorough and follows the lines of general treatments and special diseases, with an extensive cross-index for the various diseases, drugs, and authors quoted. The first or general part of the work describes (1) Mechanical Treatment, (2) Thermic Agents, (3) Chemic Agents, (4) Electricity, and (5) General Treatment. Following comes the Special Part, under which is described the treatment of the various diseases in detail.

As it stands the book is of considerable practical value to American practitioners. Besides many general directions, over 200 formulae are mentioned. The editor-translator has done his prescribed work well, but we would rather have seen him take more liberty in his editing. The book would be much more valuable if preparations found exclusively in the German pharmacopeia were eliminated, the prescriptions written in English, and such popular American and British preparations as boroglycerid mentioned. Books exclusively continental are not as satisfactory as liberally revised and edited translations.

The Nature and the Consequences of Anomalies of Refraction. By F. C. Donders, M.D., Late Professor of Physiology and Ophthalmology in the University of Utrecht. Revised and edited by Chas. A. Oliver, A.M., M.D., of Philadelphia. Philadelphia, P. Blakiston's Son & Co., 1012 Walnut Street. Price, $1.25.

This beautiful little volume consists of an English translation from the Dutch of the celebrated aphorisms of the great master of physiologic optics—Donders. The editor has tried to preserve the original sense of the essay, and has in no way interpolated more modern ideas, yet it is astonishing to note the very small extent that the science of to-day differs from the views expressed in this unique brochure published over thirty years ago. Every scientific physician should possess this classic. We cannot pass the book by without expressing our gratitude at the patriotism of the editor and publisher in producing the work so handsomely in spite of the fact that the financial returns must be necessarily very limited.

Atlas of the External Diseases of the Eye. By Prof. Dr. O. Haab, of Zurich. Edited by G. E. de Schweinitz, A.M., M.D. With 76 colored plates and 6 engravings. Philadelphia, W. B. Saunders. Price, $3. 1899.

This handsome volume is the latest one of Mr. Saunders' American edition of the celebrated "Lehmann Medicinische Handatlanten." There are 40 colored plates, illustrating nearly all the commoner external diseases of the eye, together with a concise epitome of the diagnosis and treatment of the diseases depicted. The plates are very true to nature; in fact, with the exception of those in Ramsay's Atlas, we have never seen better ophthalmic colored illustrations. But the latter book sells for $20, while Haab's Atlas is offered at the low price of $3. At this figure it is placed within the reach of all, and it is the general practitioner, lacking sufficient clinical observation of eye-diseases, to whom these plates will be of most value.

THE READY REFERENCE HANDBOOK OF DISEASES OF THE SKIN. By George Thomas Jackson, M.D., Professor of Dermatology in the Woman's Medical College of the New York Infirmary and in the Medical Department of the University of New York; Chief of Clinic and Instructor in Dermatology, College of Physicians and Surgeons, New York, etc. With 75 illustrations. Third edition, revised and enlarged. New York and Philadelphia, Lea Brothers & Co. 1899.

This is one of the sensible, practical books, the object of which is to instruct the busy physician and facilitate, as well as improve, the quality of his daily work, rather than to show off the erudition of the author. Hence its success and the necessity of a third edition within a comparatively short time for such a work. The numerous original and very graphic illustrations, the large collection of formulas in the appendix, as well as scattered throughout the book, and the clearly indicated pronunciation of all names of diseases, are features which are particularly useful to general practitioners.

DIAGNOSIS BY THE URINE; OR, THE PRACTICAL EXAMINATION OF URINE, WITH SPECIAL REFERENCE TO DIAGNOSIS. By Allard Memminger, M.D., Professor of Chemistry, Urinology and Hygiene in the Medical College of the State of South Carolina, etc. Second edition, enlarged and revised. With illustrations. Philadelphia, P. Blakiston's Son & Co. Price, $1. 1899.

Among other additions to the second edition of this very condensed and in some respects useful little handbook of urinary examinations, there is a chapter entitled "Differential Diagnosis of Chronic Bright's Disease, Based on a Classification of the Normal Absolute, the Absolute and the Relative Absolute of Solids and Urea Found in Urine with Albumin and with or without Tube Casts." We had always supposed that urea itself was a solid; but there are other strikingly original views advanced in this rather top-heavy chapter.

PROGRESSIVE MEDICINE: A QUARTERLY DIGEST OF ADVANCES, DISCOVERIES, AND IMPROVEMENTS IN THE MEDICAL AND SURGICAL SCIENCES. Edited by Hobart Armory Hare, M.D., Professor of Therapeutics and Materia Medica in the Jefferson Medical College of Philadelphia. Octavo, cloth, 490 pages, 28 illustrations and 3 colored plates. Philadelphia and New York, Lea Brothers & Co.

With the existing superabundance of "annuals" designed to furnish condensed summaries of the progress made each year in medicine, in addition to the reviews of medical progress in various journals, there would seem little room or *raison d'etre* for a new venture in the same line. The publishers of this work, however, believed that a quarterly digest, which should both summarize and comment intelligently upon the current developments, discoveries, and advances in the science and art of medicine, would be helpful to physicians. It is true that, with the present tremendous activity in all the branches of medicine and its auxiliary sciences, in many of which even the terms describing the results of investigations are becoming more and more a foreign language to medical practitioners as well as to the workers in other special fields, there is need of much interpreting of findings and of directions as to how best they may be turned to practical account. In some of the best year-books this necessity is recognized. These contain numerous special articles, describing in language intelligible to all physicians the practical significance and bearing of the more important achievements in various fields of exceptional interest to clinicians. Still, a great amount of sifting is necessary to obtain the genuine

grains out of the mountains of chaff which the experimenters in all parts of the world are piling up every year, and "Progressive Medicine" promises to help effectually in doing this. Prof. Hare has surrounded himself with an able staff of writers, and the volume before us is entirely creditable in all ways.

VACCINATION: ITS NATURAL HISTORY AND PATHOLOGY. By Monckton Copeman, M.A., M.D. Cantab., M.R.C.P. Lond.; Inspector of her Majesty's Local Government Board; Lecturer on Health in the Medical School of Westminster Hospital, etc. New York, The Macmillan Co. Price, $2.

At present one feels an urgent need of fortification against the numerous "antis" springing up here and there like mushrooms after a rain and threatening to upset the very foundation of our science. The "conscientious objector" in England, the antivaccination society in Germany, the embryo-antivaccinationist in this country and the tender-hearted antivivisectionist, make a formidable array which the scientific mind contemplates with apprehension. The only way to cope with these mental weaklings is by hard scientific facts, and the book before us is one that contains all the information necessary for the proper comprehension of vaccination. The author, a well-known scientist in England, presents no arguments either for or against vaccination; indeed, he apparently ignores that "society composed," as Liebermeister puts it, "of persons who might properly be called cranks with little knowledge of medicine and less of great historical movements, reinforced by certain physicians and quacks who are strangers to small-pox and small-pox epidemics, and absolutely incapable of weighing scientific evidence." The book is a collection of Milroy lectures for 1898 delivered before the Royal College of Physicians of London, and treats the subject from its scientific aspect entirely. But at the same time its very nature shifts the burden of proof, or rather disproof, on the shoulders of the antivaccinationists. In the introduction the author gives an interesting historical review of small-pox and its treatment, antedating the brilliant discovery of the immortal Jenner. He then relates the circumstances which led up to Jenner's discovery, and the historic and scientific data relating to that epoch-making period. In Chapter II. he reviews the relationship of variola and vaccinia, disproving the duality of these two affections and establishing the fact that cow-pox is variola modified by the transmission through the organism of the cow. Chapter III. contains the history of various lymph stocks and this is followed by the histology of the vaccine vesicle. Chapter V. is devoted to the bacteriology of vaccination. Here is given a detailed account of the numerous futile attempts made by the author and others to isolate the specific germ, and the various micro-organisms contained in the lymph are mentioned. In Chapter VI. the author describes his experiments of successful inoculation of a monkey with both small-pox and vaccinia, the manifestation of the two diseases differing only in the greater constitutional disturbance produced by the former. The protective power of either was also established by these experiments.

A thorough discussion of "antitoxin," "animal vaccination," and "glycerinated lymph" forms the contents of the following three chapters. The book ends with Appendix No. I. on the preparation and storage of glycerinated calf lymph, and Appendix No. II. on the bacteriology of vaccine lymph. To make it still more useful as a book of reference, the author has appended to each chapter a sufficiently complete bibliography. A number of excellent plates and photographs admirably complete this little volume, which, taken all in all, is a valuable addition to the physician's library.

PRACTICAL NOTES.

Ice Massage has recently been highly commended by William Ewart, of London. It is described as especially valuable in cases of rheumatoid arthritis, in pemphigus complicating painful joint affections, and for the pleuritic pain accompanying acute pneumonia. The pain is markedly, and at times permanently relieved. The application is by gently rubbing the affected part with a small block of ice grasped in the flannel-protected hand, the duration and frequency of the application being modified according to the character of the case and the relief afforded.

The Treatment of Chronic Articular Rheumatism. Hirschkon (*Wein. Med. Blatter* 98, No. 52) gives a short account of internal and external therapeutic methods useful in chronic articular rheumatism, and then devotes himself to the consideration of the topical use of napthalin, which he has employed in 20 cases. The napthalin is merely laid over the affected joint and covered with several folds of linen, the application being renewed twice daily. He claims for napthalin a vascular excitant action, an absorptive influence upon old and torpid exudates, and a remarkable sedative effect upon the painful rheumatic nodes.

Diet in Acute Gastro-Intestinal Catarrh of Infants. Dr. W. Soltau Fenwick, of London, in his recent work entitled "Disorders of Digestion in Infancy and Childhood," says: "In some cases a cream mixture agrees better than diluted milk, or whey thickened with a small quantity of malted food or predigested gruel is retained when other forms of food are rejected. Gradually and with caution the amount of milk is increased, until at last the child is able to take the full allowance suitable to its age. Even when the convalescence is well advanced, it is advisable to restrict the infant to a milk diet, with or without Mellin's Food, and to avoid the use of unmalted foods for some time."

A Superior Combination of Mercury for Subcutaneous Injection. Desesquelle and Brétonneau recommend benzoate of mercury in preference to the bichlorid. The advantages pointed out are the greater solubility and lesser toxicity of the former. The following combinations are recommended:

℞ Hg. benzoic.,	0,60
Ammon. benzoic. neutr.,	3,0
Aqu. dest. *q. s. ad*	60 c.c.

The injection is entirely painless; but, should an analgesic be desired, it can be added in the following manner:

℞ Hg. benzoic.,	0,60
Ammon. benzoic. neutr.,	3,0
Cocaini mur.,	0,12
Acid benzoic.,	0,60
Aqu. dest. *q. s. ad*	60 cm^3.

Gastric Photography. Bial, and later Hirschmann, have devised and are perfecting an instrument by means of which it will be possible to take photographs of the interior of the stomach. It is essentially composed of a series of lenses and a camera attached to a stomach tube. The light is derived from an electric lamp. The results so far obtained are very satisfactory.

A Bacteriologic and Pathologic Laboratory in Delaware. The State Board of Health of Delaware has established a laboratory in Newark, Del., at the State College, for the purpose of aiding the physicians of the state in the diagnosis of typhoid fever, diphtheria, hydrophobia and tuberculosis as well as other diseases which can be elucidated by examination of urine, blood, stomach contents, etc. The aim will also be to carry on original investigation with a view of furthering the progress of sanitary science in general and bacteriology in particular. Prof. Chester, the State Bacteriologist, has been appointed director of this laboratory, and Dr. A. Robin, bacteriologist and pathologist.

Points in the Treatment of Diphtheria. Dr. McSwain emphasizes, in the *Memphis Medical Monthly*, the following points to be observed in the treatment of diphtheria:

1. Give antitoxin.
2. Give it early, fearlessly, judiciously.
3. Give it in full doses.
4. Give it in mild cases, as well as severe ones.
5. Give it in croup that does not yield in a few hours after having given an emetic and a few doses of coal oil.
6. Give it on a clinical diagnosis, not waiting for a bacteriological diagnosis to be made.
7. Use an American product. Don't use a foreign preparation, especially when the manufacturer seeks to prostitute a great blessing to purposes of personal greed.
8. Do not stand a moment on the expense of the remedy; it is at most not so costly as a funeral.
9. If you are not allowed to administer the remedy because of opposition on the part of parents or consultants, quit the case. Do not become a party in the treatment of this or any other disease when you cannot be allowed to use or have used the very best treatment known for the disorder.
10. Local treatment. Hydrogen dioxid is the best of all local remedies, and should be used with a suitable atomizer in proper dilution. A gargle of some agreeable antiseptic solution may be used frequently. No caustics or strong solutions of drugs, mops or brushes are needed.
11. Surgical interference in stenosis of the larynx should be promptly resorted to when suffocation is threatened.

[To these suggestions we would add as very important:

12. Immunize all exposed members of the household—especially the children. Antitoxin probably shows its greatest value when used as an immunizing agent.—Ed.]

MEDICAL NEWS AND MISCELLANY.

American Climatological Association. The annual meeting of this body was held at the Academy of Medicine in New York, under the presidency of Dr. Beverly Robinson, of that city, on May 9th,10th and 11th. The sessions were uncommonly interesting. On May 11th many of the members participated in an excursion to Liberty, N. Y., and inspected the work of the Loomis Sanitarium for Consumptives there.

Martyrs of Science. Dr. Angelo Knorr, *Privat-docent* in the Veterinary School of Munich, died on February 22d, from acute glanders, contracted in the course of an experimental research on mallein. Before going to Munich, Dr. Knorr had been senior assistant in the Berlin Institute for Infectious Diseases, and he was afterwards assistant in the corresponding institute at Marburg. He was a young worker of the highest promise, and had done good work in regard to tetanus infection. This death recalls some other tragic occurrences of the same kind which have taken place in recent years. Helman, the Russian investigator who discovered mallein, himself fell a victim to accidental inoculation of the glanders virus. Some time afterwards another Russian, Protopopow, died of glanders contracted in a French laboratory. An Austrian physician, Dr. Koffmann-Wellenhof, died of the same disease, contracted in the institute of Hygiene at Vienna. On January 17th of the present year Dr. Giuseppe Bosso, of the University of Turin, died of infection contracted in the course of cultivations of tubercle bacilli made in his laboratory. Not long before Dr. Lola, assistant in the maternity department of the Czech University Hospital of Prague, died of tetanus caused by an experimental inoculation made on himself. Some fourteen or fifteen years ago a medical student of Lima proved that "verruga Peruana" is an infectious disease by inoculating himself with it, an act of scientific devotion which cost him his life. Only this week we have to record that Major J. F. Evans, of the Indian Medical Service, has died of plague contracted while conducting a *post mortem* examination. There are doubtless others who have fallen on the same glorious battlefield, but *carent vate sacro.* Besides those who have died, there are many who have only escaped with their lives after long and painful illness. Professor Kourloff contracted anthrax in a laboratory at Munich, and was saved only by vigorous surgery. Dr. Nicholas supplied, in his own person, the first example of tetanus produced in man by inoculation of the pure toxin of the bacillus of Nicolaier. John Hunter inoculated himself with a loathsome disease, and a London physician now living incurred the same penalty in the cause of science. Morton nearly killed himself with sulphuric ether, and Simpson more than once risked his life in experimenting with unknown anesthetics. Let these facts—and with a little trouble the record could be made much longer—be remembered when antivivisectors taunt investigators with not daring to make experiments on themselves.—*Brit. Med. Jour.*

A Pessary in the Vagina for Thirty-two Years. Blondel reported before the Obstetric Society of Paris a case of a woman 68 years old, who came to him on account of a profuse, fetid, bloody discharge from the vagina. An examination revealed a hard round body in the posterior fornix, which was extracted with great difficulty. It proved to be a pessary which, according to the woman's statement, was introduced 32 years ago.

A New Treatment of Chorea. Dr. J. Howe Adams contributed to the *Archives of Pediatrics* for May, a paper reporting the successful treatment of several cases of chorea with sulphonal and trional, especially the latter. He gave two-grain doses every four hours for a child of ten years. One of the cases cured in this way had been aggravated by arsenic.

A Simple Method of Reducing Shoulder Dislocations by Manipulation. Miller (*Scot. Med. and Surg. Jour.*, May, 1899) commends, as almost invariably successful, a simple method of manipulation for subcoracoid dislocation. The patient is seated, the arm grasped at the wrist and above the elbow and flexed to a right angle at the elbow. An assistant stands at the other side of the patient and steadies the scapula with both hands. The arm is then carried carefully outward and upward with outward traction until it is at right angles with the body. This procedure is designed to relax the supraspinatus and deltoid, to unlock the neck of the humerus from the deltoid edge and to bring the humeral head in close apposition to the glenoid cavity. As soon as the muscles are felt to relax, an internal rotation of the humerus, produced by dropping the hand, will cause the articular head to glide into place. The additional aid of an anesthetic, of free circumduction to enlarge the rent in the capsule, or of pressure, by the thumb and fingers in the axilla, upon the head of the humerus, may be required. While these procedures have been successfully employed by many surgeons in combination with other methods, the author claims to have systematized them upon a scientific basis.

Some More Obstetric Don'ts. Dr. Moore formulates the following don'ts for the obstetrician:

Do not make an examination unless you are clean, and make as few examinations as possible.

Do not use the grease pot generally found about the room.

Do not have anything about the bed that is not clean.

Do not attend a case of labor unless you are clean enough to assist in a laparotomy.

Do not proceed with the examination until the patient is clean. Respectability is no barrier to infection and disease.

Do not use ergot and douche if there are no indications.

Do not use more than one ligature on the cord if there is only one fetus.

Do not use any but clean pads to the vulva.

Do not fill your satchel with a dirty Kelly pad that has been used in all sorts of cases, but in its place carry *antiseptics*.